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MAY 5, 1924

Railway Age

FIRST HALF OF 1924—No. 22

NEW YORK—MAY 3, 1924—CHICAGO

SIXTY-NINTH YEAR

Published Weekly by Simmons-Boardman Pub. Co., 30 Church St., New York, N. Y. Subscription Price U. S., Canada and Mexico, \$6.00; foreign countries (excepting daily editions), \$8.00, and \$10.00 a year including all dailies; single copies, 25c. Entered as second-class matter January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.



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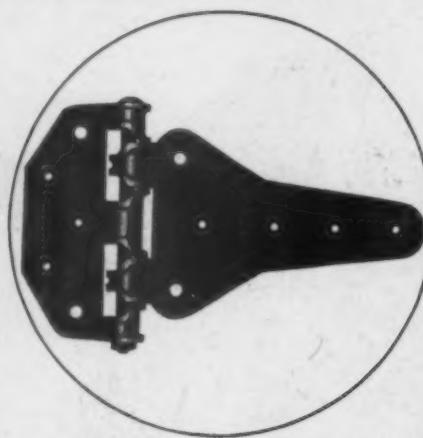
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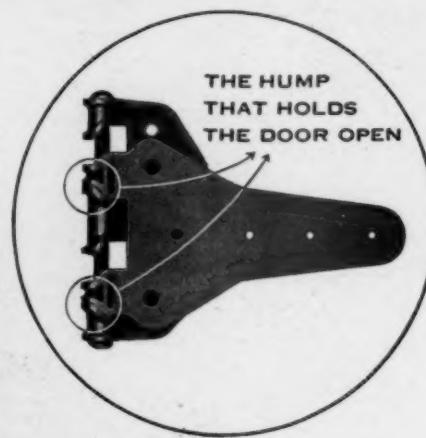
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EDITORIAL

Railway Age

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The competition on the "Best Methods for Bringing About Co-operation Between Railways and Their Employees to Promote Efficiency" which closed on April 15, proved to be a most decided success.

Competition on Co-operation

Three hundred and seventy-two contributions were received, the writers representing a pretty fair cross-section of the railroad business, from a member of the board of directors down to all classes of men in the ranks, including laborers, helpers and apprentices. There were also Railroad Y. M. C. A. secretaries, shippers, farmers, labor experts, labor union chairmen, publicists, editors and students. A considerable number of contributions came in too late to meet the requirements of the closing date and are not included in the above number. Each contribution was numbered when it was received and typewritten copies were then made for the judges without any other identification than the number. This has consumed a considerable amount of time, but the material has now been turned over to the judges and a decision may be expected within the next few weeks.

Some roads have, in recent years, issued to their stockholders and others interested, preliminary statements of the year's operations. These are, in practical effect, annual reports in abstract. They

Preliminary Annual Statements

vary considerably. Some contain the income account and the remarks of the president but omit the remainder of the voluminous statistical tables which are to be found in the annual report itself. Others contain selected tables—a portion only of those of the annual report. A common custom is to include a notice that the complete annual report will be available to such stockholders as desire it. These preliminary statements ought to be in more universal use than they are; the railroads that publish them, however, are still few in number. The number is increasing year by year as more roads see the use that can be made of them. This increase is, in itself, proof that the idea embodied in the preliminary statement has merit. The railways seem to have had difficulty in determining how much information it is desirable or necessary to give their stockholders or, to put it in another form, in determining how much information the stockholder desires to have made available. The difficulty is a basic one. It results primarily from the peculiar position of the stockholder who is supposed to be one of the owners of the property, but whose actual participation in the affairs of the company is, as concerns the vast number of individual holders of railway shares, limited. The railways devote much attention to putting their case before the public. Nevertheless, the number that attempt to put their case before their own stockholders is extremely small. The statistics that appear in an annual report are, of course, necessary. Some stockholders want them; analysts must have them. But, the annual report should also go on to the next step. It should contain an adequate and interesting analysis of the statistics themselves, supplemented by that information that cannot be put in statistical form about what the railroad is doing or trying to do and, in addition, giving stockholders information about the trend of railway affairs generally. The public is interested in the various aspects of the railway problem—rate

regulation, labor matters, taxation and the other factors that continually arise. Does it not follow that the stockholder is particularly interested? This indicates the value of the preliminary statement. It gives the executive an unusually favorable opportunity to address his own stockholders on matters in which the executive and stockholders are particularly interested. It follows that if the stockholder or other person addressed is sufficiently interested he can study the affairs of the railroad further by sending for the more voluminous annual report itself.

The Pennsylvania Railroad placed an electro-pneumatic interlocking in service at Aspinwall, Pa., last September

An Interlocking Saves \$36,690 a Year

that operates the several switches and signals formerly controlled by three separate mechanical plants and by this combination has accomplished a saving in operating expenses of \$36,690 a year, or about 18 per cent on the investment for the new facilities. Under the old arrangement with the three interlockings, trains could be advanced from one interlocking only to the home signal of the next plant while with the present combined control, movements can be made through all three plants without delay. The flexibility of operation within interlocking limits, permitting single line movements against the normal direction of traffic, the passing of preferred trains around slower moving ones and the possibility of making switching or crossover movements across the main tracks without the necessity of train orders, has reduced the train stops and delays so that it is estimated conservatively that five hours' train delay is eliminated daily. At a cost of \$16.12 per train hour this equals \$29,015 a year. Under the old arrangement nine operators and five signal maintainers were employed at the three plants at an annual wage of approximately \$26,925, while with the new interlocking three operators, three levermen and three maintainers receive a total annual wage of \$19,250, making a saving of \$7,675 in wages alone. This sum, added to the saving in train operation, makes a total of \$36,690 a year. There are undoubtedly many situations on other roads where a consolidation of two or more interlockings would effect proportionately large savings. At other places it is possible to place in an existing tower a small power machine for the control and operation of an outlying switch, a crossover or a crossing located within a mile or two of the present interlocking.

During the past few months the *Railway Age* has repeatedly referred to the subject of inadequate engine terminals, pointing out how a great majority of existing terminals limit, some to a small and

Inadequate Engine Terminals

some to a large degree, the net earnings of the railroads. In an endeavor to drive home a realization of these conditions to higher railroad officers not in daily touch with the terminal situation, many actual instances have been cited in which the lack of certain facilities is costing the railroads much more than the interest on the money required to finance the provision of them. In one case a terminal is compelled to operate without modern equipment for handling coal and

ashes; in another, machine tools are lacking for the prompt handling of machinery repairs; in another, boilers must be washed with cold water, or the boiler washing plant has been outgrown so that locomotives are blown off to the pit with a resultant waste of the steam and hot water which represents so many pounds of coal and hence dollars and cents. Sometimes power trucks and crane facilities are entirely lacking, and heavy locomotive parts must be removed from locomotives, transported to the machine shop, returned and applied by manual labor. This practice might be economical in China or Japan where labor gets a few cents a day but it is costly in America at present wage scales. Many terminals are lacking in housing facilities for locomotives, which is a particular handicap in northern climates subject to severe winter weather and which always delays more or less the conditioning and turning of power. It would not be difficult to find terminals which are as bad, or worse, off than that of a well-known eastern road at which 50 locomotives are handled through a 16-stall house every day, 8 of these stalls being constantly required for repair work. The situation at this point is being aggravated by the fact that a majority of the freight locomotives turned are Mallets. Continued reference to so-called "horrible examples" is not agreeable, but it cannot be avoided as long as present conditions exist.

The New York Transit Commission has made public an ambitious plan for the construction of subways for the exclusive use of railroad suburban trains

Terminal Facilities for Suburban Service so that these trains, running under the streets of the city, could distribute their passengers to their places of business without recourse to the city's over-crowded intra-city rapid transit facilities. The project would call for an expenditure of slightly less than three-quarters of a billion dollars, of which the railroads would be asked to contribute 138 million. The Transit Commission has not yet given formal approval to this plan, which was prepared under the direction of its consulting engineer, but has made it public for the purpose of stimulating discussion—which is exactly what it needs. The new subway lines proposed would begin at the present terminal stations of the railroads' commuting lines, or at new stations to be constructed, and be built as loops, connecting these stations with each other and stopping at several subway stations in a manner to enable any passenger on any train to alight from that train at some point near his place of business. Convenient, but expensive. The ten-cent fare proposed for this subway would, it is believed, with the estimated traffic pay operating expenses and interest and amortization on the investment of the railroads and the operating company. But who would provide the funds the roads would need to enlarge their own facilities if the new subway brought vast increases in their traffic? Can the steam railroads rightly be called upon to make vast expenditures to develop short-haul, reduced-rate passenger service, which service is generally unremunerative? The New York municipal authorities certainly are showing that they expect such action from the Long Island Railroad. The New York Transit Commission has not in our opinion, gone too far in this report in expressing the importance of the problem of dealing with suburban passenger traffic in and around New York. Several railroad terminals have reached the point of saturation in the number of trains they can handle. Manifestly, something must be done. We cannot understand, however, why the railroads should be asked to contribute so largely to a project the great expense of which is due primarily not to its provision for lessening terminal congestion but for the relief which it offers to local transit lines in carrying passengers between the railroad terminals and their places of business. The demand for expenditure for unremunerative railroad development in great centers of

population is not restricted to New York. It exists in almost every large city and appears to be growing rather than otherwise. Would not the adoption of a firm and consistent policy by the railroads on all such matters and the persistent education of the public in this viewpoint be likely to save unhappy public relations and possibly litigation in the future?

Business Conditions

GENERAL BUSINESS is being adversely affected by things that are being said and done in Washington. This is not the opinion of business men alone. The Harvard Economic Service, which, is a perfectly dispassionate, unprejudiced and disinterested commentator, says in one of its latest weekly letters: "The general advance during January and February was followed by an equally general reversal in March. The unsettledness in business opinion which became noticeable in the latter part of February is attributable chiefly to political developments. This change was accompanied by a weakening of prices, immediate curtailment of forward buying and a decrease in manufacturing activity."

That part of the manufacturing industry which is composed of railway equipment and supply companies is feeling the effects both of fluctuations in railway traffic, which are causing railway officers to be uneasy about future business, and of the political attacks upon business in general and the railways in particular, which have the center of the stage at the national capital. Total car loadings in the week ended April 12, the last which have been reported, were 881,299 as compared with 947,271 in the corresponding week of 1923. Almost nine-tenths of the recent decline in total loadings has been due to an abnormal decline in shipments of coal, but it necessarily has an effect upon railway earnings and consequently on railway expenditures. Furthermore, with hundreds of bills affecting railways pending in Congress, the adoption of any of the worst of which would soon put a large part of the companies in bankruptcy, it is natural that the railways should hesitate to place large orders until they can get reliable information as to whether Congress really is going to try to ruin them to make a politician's holiday.

As a matter of fact, however, it is easy to exaggerate the extent to which the railway equipment and supply industry is suffering from present conditions. The Car Service Division of the American Railway Association has just made public a statement showing the number of locomotives and cars that the railways had placed in service and still had on order on April 1. The only comparable figures for 1923 available are for the period from January 1 to March 15, 1923. The following figures for locomotives and cars include those rebuilt as well as entirely new. Up to March 15, 1923, the number of locomotives placed in service was 727, and the number still on order was 2,113. Up to April 1, 1924, the number placed in service was 661, and the number still on order was 520. The decline in the number on order is large and significant. The number of freight cars placed in service up to March 15, 1923, was 29,406, and the number on order on that date was 95,379. The number placed in service up to April 1, 1924, was 37,652, and the number still on order was 69,298. These figures show that the situation with respect to freight cars is better than with regard to locomotives. The total number of freight cars that had been placed in service and that were still on order on April 1 was 106,950. This was greater than the total number built in any entire year between 1917 and 1923. Besides, the railways are spending more for permanent additions and betterments, as compared with the amount they are spending for equipment, than they were last year.

When consideration is given to the true principal causes of the present situation it becomes difficult to feel pessimism-

tic regarding business in general and the railway and railway equipment and supply businesses in particular during the entire year 1924. Most economic and financial authorities agree that the general conditions underlying business in this country are sound. As to railway traffic and earnings, there were reasons for anticipating wider fluctuations this year than in 1923 because the fluctuations last year were remarkably, if not, unprecedently small. Shipments of coal, which have declined abnormally, are bound largely to increase, since they have recently amounted weekly to only about two-thirds of the nation's average weekly consumption. There is good ground for believing that in 1924, as in most past years, the total traffic and earnings of the railways will be much larger in the second than in the first half of the year whereas in the two halves of 1923 they were almost the same. Finally, with the day on which Congress is scheduled to adjourn only a few weeks ahead, the passage of any important railway legislation at this session seems improbable. President Coolidge's attitude regarding the Transportation Act is well known, and if radical and destructive legislation should be jammed through late in the session it seems likely that it would be given its quietus by a veto.

Prophecies regarding future business are always hazardous, but in view of all the circumstances it seems reasonable to conclude that there is prospect of both better railway earnings and an increase in the orders placed by the railways for equipment and materials in the second half of the year.

An I. C. C. Interim Inspection of Train Control

THE LETTER from Commissioner Esch of the Interstate Commerce Commission indicating that the commission will grant an interim inspection of train control installations on the completion of 20 per cent of an engine district, will afford considerable relief to the carriers concerned. We publish elsewhere a letter from Frank J. Sprague making the following quotations from a letter written to him by Commissioner Esch: "Should any carrier undertake a complete permanent installation in accordance with our order and complete a section of not less than 20 miles on the portion of the railroad designated in the order and equip not less than such number of locomotives as the chief of our automatic train control section and the carrier may agree upon, we will co-operate with the carrier if requested in making a preliminary inspection for the purpose of making such criticisms as may be deemed necessary, reserving final inspection and tests for approval of the complete installation as directed by the commission's order."

The statement of the commission on this question was brought out in correspondence between Commissioner Esch and Mr. Sprague, who is president of the Sprague Safety Control and Signal Corporation. Although the correspondence in question concerned the installation of the Sprague device on the Mohawk division of the New York Central, the ruling quoted is applicable to all carriers. The benefit to the carriers from such a rule would be that of securing approval or rejection of a device by installing only approximately 20 per cent of a complete engine district on the designated territory and under a valid contract providing that in case the interim inspection meets the approval of the commission, the entire district will be so equipped.

Up to this time the commission has inspected and approved only one complete train control installation, which is of the ramp type. The manufacturers of induction train control systems, and the carriers which have encouraged the development of this type of train control by contracting for installations, are naturally anxious to secure an opinion from the

commission relative to the acceptability of such devices as early as possible. The carriers are trying to secure systems that will best meet their needs, and a majority of them are now trying diligently to meet the requirements of the first order, as is evidenced by the number of contracts that have been let for complete installations.

An interim inspection will bring out the approval or rejection of these devices quicker and with less expense than the complete installations. In view of the fact that there is a wide divergence of opinion on the status of the development of train control, the logical solution for this situation would seem to be for the commission to recall the second order of January 14, 1924, for the time being and accumulate data as to train control development from the 49 installations specified in the original order.

Designing Railway Buildings for Use

IN DESIGNING a railway building such as an enginehouse, a shop or a station, an engineer faces two primary requirements. The construction must be such as to secure the degree of durability required and be economical in maintenance. It must also be adapted to the uses to which the building is to be put. In general, relatively little criticism may be directed at the character of construction of railway buildings, for they measure up well with those of other industries. This is not so true with reference to the adaptation of the building to its use, especially with reference to refinements in detail which, though seemingly unimportant, have an important influence on the efficiency with which the building is operated.

It is, of course, trite to say that a building is designed to be used. Yet the design of a structure for its most efficient use requires the display of skill of the highest order and this in turn requires an intimate knowledge of the operations which are to be performed within the structure. It is unfortunate that engineering officers and managements alike consider the design of a building too largely as involving merely the selection of materials and give little thought to the necessity for detailed studies of operations. After all, a building is merely a facility, the same as a tool, by means of which men may be able to perform work with the greatest efficiency. This requires pleasant and comfortable working conditions, the elimination of unnecessary steps through the convenient location of service facilities, etc. It involves studies of methods in effect in existing facilities to determine how they may be improved and the observation of modern methods elsewhere.

While much progress has been made in this direction in recent years, still more remains to be done to make the average railway building as efficient as the modern industrial shop. One of the most important developments in the design of railway buildings during the last few years has been the improvement in methods of ventilation and illumination, both of which are reflected in increased efficiency of the workers. Another direction in which much can be done was illustrated in the terminal which the New York Central built near Syracuse, N. Y., last year, where tests indicated that the convenient location of service facilities saved unnecessary steps on the part of a gang of 12 workmen aggregating 43 miles in one eight-hour shift. A similar study of the location of toilet facilities made at another large shop showed that their relocation and decentralization would result in a saving of 20 man-days daily. These facts illustrate the possibilities for improvement in the efficiency of workmen which are possible from proper attention to the planning of the more detailed phases of building layouts. Since econo-

mies such as these are effected every day after a building is placed in service, the importance of insisting upon engineering departments giving building design sufficient attention to develop the most economical layout is self-evident. This is a phase of engineering which can well be developed more fully than it has been on practically every road.

Where Railway Mileage Has Declined

WHEN PART or all of a railroad has to be abandoned and torn up the owners lose what they have invested in it. If, however, the service of the line torn up is needed by the people living along it, the loss to them owing to the reduction or destruction of the value of their own property is much greater. To many of them the loss is a continuing one because of the increased expense they must, in consequence, incur in getting their products to market, and in getting to their business places and homes the commodities they must buy.

The contemplated abandonment of the Chicago, Peoria & St. Louis, which serves a rich and well populated agricultural district in Illinois, has attracted widespread attention because it has a larger mileage than most railways that have been abandoned, and because of the publicity that has been given to the efforts of its owners to get authority to tear it up and realize its scrap value, and the counter efforts that have been made by the people it serves and public officials in their behalf to prevent it from being torn up. The *Railway Age* publishes elsewhere in this issue an article entitled, "What About the Patrons of an Abandoned Road?" which gives the results of an investigation made by a member of our editorial staff in the communities served by this road. It is to be wished that this article might be read by all those who are not disposed to recognize the fact that a policy of regulation that destroys the ability of railways to earn reasonable profits will in the long run destroy the railroads themselves, and who persist in being blind to the fact that when a railroad is abandoned the largest losers are not the investors in it, but the people who are deprived of its service.

It is quite generally known that a large mileage of railways has been abandoned and torn up in the United States within recent years. The statistics of the Interstate Commerce Commission show that the total miles of railway line in existence in the country on June 30, 1916, was 254,251 miles, and on December 31, 1921, only 251,176 miles, a reduction of 3,075 miles. Official statistics regarding the changes in total mileage in the last two years are not available, but information gathered by the *Railway Age* indicates that since 1921 the net decline in mileage has been about 450 miles. It would appear, therefore, that the total mileage of the country is now about 3,500 miles less than eight years ago. A fact that is not generally known is that reductions in railway mileage have occurred in almost all parts of the country.

Statistics of railway mileage by states for the last two years are not available, but the statistics of the commission show that between 1916 and 1921 there were increases in 16 states and reductions in 31 states. The states in which the increases in mileage were more than 100 miles were as follows: Kentucky, 106; Montana, 199; Oklahoma, 105; Oregon, 270; South Carolina, 505; Texas, 314. The reductions in states in which they exceeded 100 miles were as follows: Louisiana, 483; Colorado, 423; Michigan, 275; Indiana, 270; Georgia, 242; Arkansas, 235; Washington, 201; Missouri, 195; Wisconsin, 192; Pennsylvania, 187; Mississippi, 165; Nevada, 157; Ohio, 150; North Carolina, 149; Alabama, 145; Minnesota, 143; California, 134; Virginia, 131; New York, 109; Iowa, 103.

A decline of railway mileage was a thing that was entirely unknown in this country up to 1916. From the time the first rail was laid until then the mileage increased in every year. One explanation that has been offered for the decline which has occurred within the last eight years, has been the development of other means of transportation, and especially of motor trucks operating on hard surface highways. The statistics given above demonstrate that there is little or no relationship between the development of motor transportation and the decline of railway mileage, because the decline of railway mileage has been relatively as large, and even larger, in states where there have not been extensive construction of paved highways and a large development of motor transportation as in states where there have been. For example, New York and California each has more than 8,300 miles of railway and in each of them there has been a large development of motor transportation, but the reductions of railway mileage in these states have been both relatively and absolutely much less than in Colorado and Louisiana in each of which the railway mileage is only a little over 5,000 miles, and in which there has been a relatively small development of motor transportation.

In view of the fact that the reduction of railway mileage has occurred throughout the country, and of the parts of the country in which the largest reductions have occurred, there is but one general cause by which it can be explained. This is that the operation of railways in all parts of the country has been made relatively unprofitable which, in turn, has been due to a restrictive policy of government regulation. Naturally those lines which, as a result of the policy followed, have been first forced into a position where they could not earn enough to pay their way have been the first to quit business. In most parts of the country where railway lines have been torn up, most of the communities along them have been left without any regular and dependable transportation service, and the people have suffered losses as large in proportion as those that will be suffered by those living along the Chicago, Peoria & St. Louis if it is torn up.

The same policy of regulation, which has caused the railway mileage torn up within the last eight years to exceed by about 3,500 miles the mileage built, also has greatly impaired the ability of the railway companies to make improvements in the facilities and service of a large part of the mileage that has not been torn up. The total losses to the American public that have thus been caused cannot be even approximately estimated, but they have been huge. If the spirit now being manifested regarding railway regulation by a large part of the members of Congress is given effect in legislation, the losses suffered by the public in future will be many times greater than those that they have been occasioned in the past and are suffering now.

Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Arbitration Between Carriers and Employees—Boards of Adjustment. Hearings before Senate Interstate Commerce Committee on S. 2646 (Howell Railway Labor Bill) 364 p. Published by the Government Printing Office, Washington.

Business Fluctuations and the American Labor Movement, 1915-1922, by V. W. Lanfear. A thesis submitted to Faculty of Political Science, Columbia University. Author is Assistant Professor of Political Economy, Yale Univ. 132

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p. Publisher not given, but probably available from Columbia Univ. or author.

Concerning Depreciation, by Robert A. Carter. His testimony before Interstate Commerce Commission in hearings on Docket No. 15100. Railroads, p. 9-16, 62-77. 94 p. Publisher not given, but probably obtainable from author, care Consolidated Gas Co., New York City.

The Essential Factors in Steam Locomotive Design, by T. Grime. 38 p. Published by Association of Engineering and Shipbuilding Draughtsmen, London.

Railway Rates and Cost of Service, by Owen Ely. 148 p. Published by Houghton, Mifflin Co., New York and Boston. \$2.00.

Transportation in Relation to the Export Trade in Agricultural Products, by Roland M. Kramer. U. S. Dept. of Commerce Trade Information Bulletin No. 216. 74 p. Published by Govt. Print. Off., Washington.

Periodical Articles

His Hand Has Held the Throttle for Fifty Years, by R. H. Denehey. Sketch of Oliver K. Keller, an engineman of the Broadway Limited. American Magazine, May 1924, p. 72-73.

Indian Railways, a Market for American Goods, by E. S. Gregg. Commerce Reports, April 28, 1924, p. 247-248.

Luck May Help You Get a Start, But It Won't Keep You Going, by Helen C. Bennett. An interview with F. D. Underwood, President of the Erie. American Magazine, May, 1924, p. 16, 80-90.

The Railroads and "Recapture." How Individual Roads Stand Regarding Possible Excess Earnings Over 6 Per Cent on Investment in 1923. Barron's, April 28, 1924, p. 8.

Settlement of Cuban Railway Strike. Terms as reported by Consular Officers. Commerce Reports, April 28, 1924, p. 248.

The Status of Railroad Problems, by Eliot Jones. Historical background and various factors affecting present "railroad problem." North American Review, May, 1924, p. 592-608.

New Books

General Foreman's Association 1923 Proceedings. Compiled and published by William Hall, secretary of the association, Winona, Minn. 210 pages, 6 in. by 9 in., bound with semi-flexible covers.

This book is a record of the proceedings of the seventeenth annual convention of the International Railway General Foremen's Association held at the Hotel Sherman, Chicago, September 4 to 7 inclusive, 1923. The book is of particular interest because, in spite of a lapse of two years since the last annual convention, the 1923 Proceedings proved beyond question that the association is coming back strong and promises to be a real constructive force in increasing the efficiency of railroad operation. The Railway General Foremen's Association is one of the strongest of the minor mechanical department associations and has great possibilities for disseminating much needed information regarding railroad shop "men, machinery and methods." A picture of George H. Logan, general foreman, C. & N. W., now the president of the association, is published on page 5, followed by a report of the opening exercises of the convention, the annual report of the secretary-treasurer and the usual committee reports and discussions. The proceedings also contain a highly inspirational address delivered by James C. Davis, director-general of railroads, on the subject, "Responsibilities of American Citizenship."

Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

Compound Locomotives in Use in Europe

LONDON, Eng.

To THE EDITOR:

The various articles in the survey of the European railways, published in the January 5, 1924, number of the *Railway Age*, are open to criticism in that they give very little descriptive data relative to the motive power now being operated on these roads.

The outstanding factor in the locomotive power of Continental Europe in the general adoption of compound expansion. The principle of its application is similar to that of a booster locomotive and an increase of 50 per cent in tractive force has been developed for every ton of coal consumed by equipping the locomotive with cylinders of adequate volume.

There are about one million horsepower of the standard type, P. L. M., four-cylinder compound Pacifics, illustrated on page 103. The "Nordic," four-cylinder compound is also being converted from the large Pacific four-cylinder simple expansion types. These locomotives develop 2,500 hp. at 53 per cent cut-off.

The State railways have limited the P. L. M. compound type to some extent by introducing compound expansion superheaters on the German simple type locomotives and using valve gears of the stationary engine type, such as the Lentz, Bonnefond and Berth. Its American built compounds are effecting a saving of 26 per cent in fuel compared with simple locomotives built by the same firm, having the same boiler pressure and equipped with the latest appliances. After 30 years' experience, this road has decided to use compound expansion instead of superheated simple locomotives. The Midi and P. & O. have also followed the same procedure as the State railways, with the German-type simple locomotives. Compound locomotives of the Pacific type are now being used for the fastest and heaviest express trains in Western Europe. Compounding on the Belgian State railways, under the direction of the late Mr. Flamme, was completely discontinued in 1905 and its use was strongly condemned at that time by the officers of his administration. The Italian State railways have introduced compound expansion again after having abandoned it in 1901.

Most of the Austrian, Czecho-Slovakian, Roumanian, Russian and Hungarian engines illustrated in this number of the *Railway Age* are now following the two-cylinder simple type similar to those built in Prussia. They are of the same general lines and contour in exterior make-up, as these countries are dominated largely by Prussian ideas of the old school.

It might be of interest to point out that the illustrations on page 96 and on the top of page 119 show in each case the same type of four-cylinder compound locomotive designed by Karl Goelsdorf of the Austrian State railways. These compounds were formerly used between Vienna and Prague and undoubtedly they have been taken in part by the Bohemians.

The Czecho-Slovakian freight locomotive shown on page 120 is the same type as the one shown on page 134 hauling a train on the Austrian Arlberg mountain line. These two-cylinder compounds were designed by Goelsdorf for the Arl-

berg inclines, but the Bohemians must have obtained some of them also. The Austrian freight locomotive on page 108 is not of Austrian make or design, but is a common Hungarian type and carries the stamp of Budapest in every detail. The express type of Czecho-Slovakian locomotive is of the Prussian two-cylinder model, but with the originality, due to the Bohemians, of a trumpet-shaped chimney cap, supposed to be like the English.

It is estimated that the Pistoja-Porretta mountain line in Italy, now operated by Nordic type compounds, will be completely electrified by 1926. This was the first portion of the main line that was to be electrified in that country on account of the long tunnels and difficult ventilation.

All the Scandinavian countries are using compound expansion. The Swedish State railways have accomplished a 30-per cent saving in coal and from 20 to 30 per cent reduction in the cost of repairs. The Saxon State has definitely returned to compound expansion for the more powerful express engines. These have eight large connected wheels of the Nordic express type and from all reports the Saxon railway officers are highly pleased with the results. CHARLES R. KING.

An Interim Inspection of Train Control

NEW YORK.

TO THE EDITOR:

We have been instrumental in securing a most important decision from the Interstate Commerce Commission, which will assist the railroads in dealing with the subject of train control equipment. One of the most difficult situations has been that created by the rule that inspection of and judgment as to train control equipment would be had only after a division had been fully equipped with a system selected solely on the railroads' responsibility, despite the fact that plans had to be first submitted to the Interstate Commerce Commission for inspection.

Despite the delays which have occurred in arriving at decisions by the railroads, for many of which there have been ample reasons, I have long felt that this ruling was not only an undue hardship on the railroads but was not in the best interests of the train control art or of the equipment companies, whose success is necessarily connected intimately with the constructive efforts of the railroads.

In a recent petition for a modification of existing orders, the railroads asked particularly for the voiding of the rule as to inspection. This, I think, was a mistake, as evidenced by the fact that no reference was made to this request in the decision recently returned.

Meanwhile, beginning with a particular case, I had requested action pertinent to this subject, in regard to a proposal in which the Sprague company had proposed the taking of a contract under a reasonable condition that we would: "Proceed with the preparation of the complete equipment, but the actual installation of the major part of the division to progress only after a preliminary section showed that the specifications of the Interstate Commerce Commission and certain written guarantees had been met." This simply meant that with a divisional contract we would go ahead with the manufacture of all material but after installing a section we would submit to an inspection to determine if so much of the equipment as had then been installed met the specifications of the Interstate Commerce Commission and such additional guarantees as might be included in the contract, prepared then to make any changes which might be found necessary before proceeding.

What we really asked was that there should be an interim inspection by the railroad company, and preferably also by the commission, of a typical section after comple-

tion, we meanwhile preparing for divisional equipment at our own risk, instead of waiting the completion of a multiple of like typical sections.

I took the liberty of expressing the conclusion that if the train control art is to get ahead with any such measure of success as the commission, as well as we hoped for, without abating in any degree the right of final inspection there must be some intermediate means of getting a constructive approval of demonstrated merit, whatever the system, to warrant either railroads or contractors assuming the burden of equipment.

I am glad to state that the reasonableness of this position has been recognized, as evidenced in a letter under date of March 31, received from Commissioner Esch, giving the decision of the commission as follows:

"The commission will co-operate in making such an inspection, provided the installation is on a section of the portion of the railroad designated in the order and is sufficient in extent to enable the commission to form a judgment based on this inspection as to whether the specifications will be met by a complete installation made in the same manner and of the same character as the preliminary section.

"We have had many requests that we approve plans and specifications and that we inspect and test short test installations and express our opinion as to whether the devices concerned would have our approval if installed. Manifestly we cannot undertake to do this and have declined to do so. Should, however, any carrier undertake a complete permanent installation in accordance with our order and complete a section of not less than 20 miles on the portion of the railroad designated in the order, and equip not less than such number of locomotives as the chief of our automatic train control section and the carrier may agree upon, we will co-operate with the carrier, if requested, in making a preliminary inspection for the purpose of making such criticisms as may be deemed necessary, reserving final inspection and tests for approval of the complete installation as directed by the commission's order."

I, of course, assume that although this letter was in response to individual representations, there is no question but that it is a general ruling, and as such is of the most important character, in that instead of a road being compelled to spend from \$100,000 to possibly \$1,000,000 or more without guidance, it can, on an expenditure of only one-fifth or less of the total amount, establish clearly the safety of progress on the balance of its equipment.

Presumably, the "twenty miles" means twenty miles of route, regardless of the number of tracks, and it would seem that the number of locomotives required to be first equipped should, on roads of moderate density, bear the same proportion to the total as the mileage bears to its total, although where the traffic is more dense the number of locomotives covered by the preliminary equipment can very properly be reduced.

It should not be assumed for a moment that, because the Commission has made this decision, it waives in any degree its right and intent as regards inspection of the final equipment, and that the concession made is based upon the condition that the railroad must make a bona-fide divisional contract in accordance with the order.

Personally, I believe that where such contracts are made in good faith even now, if unavoidable circumstances make necessary some extension of time, individual roads will, on presentation of the facts, receive all proper consideration.

FRANK J. SPRAGUE,
President, Sprague Safety Control and Signal Corporation.

THE CANADIAN PACIFIC is to put up a new copper wire from Calgary to Vancouver, which will give 17 through wires for transcontinental communication. Another new copper wire will be strung from Vancouver to Sumas.

What About the Patrons of an Abandoned Road?

A Survey of Communities Along the Chicago, Peoria & St. Louis Shows That They Will Suffer Vast Losses

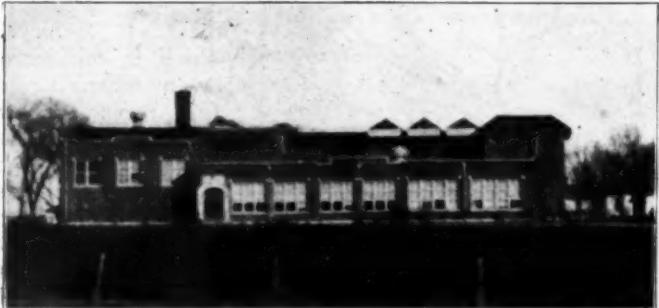
WHAT DOES IT MEAN to the patrons of a railway when their railway is taken away from them? What becomes of the homes and industries located along a railroad which ceases operation and is abandoned? To what extent are the patrons the losers through the depreciation of their property when it is deprived of transportation? These questions have been in the minds of the citizens whose homes and businesses are located along the line of the Chicago, Peoria & St. Louis since the Interstate Commerce Commission authorized the owners of the railroad to cease



Coal Mine at Cantrall, One of Several on C. P. & St. L.

operation and take up the tracks. A town to town survey of the communities served by the C. P. & St. L. by a member of the staff of the *Railway Age*, in which inquiries were made as to how the loss of transportation will affect the people, furnished the answers to these questions.

Unfortunate as this abandonment would be, the continued operation of the C. P. & St. L. would be an unjustified sacrifice of the owners of the road. From their standpoint the situation has been intolerable for several years and it has become evident that cessation of operation would soon be imperative. A number of factors have contributed to this



A Modern High School and Community House on C. P. & St. L.

situation. Physically, the C. P. & St. L. is handicapped because it has the heaviest grades and the longest line between competitive points. Since 1917 the cost of operation has increased entirely out of proportion to the returns. Employees' wages, for example, have increased 150 per cent while the average return per ton of freight handled has increased only 45 per cent. Restrictive legislation has had its part in adding to the burden and lately the Illinois state administration, by obstructing the sale of the road in parcels so that operation could continue, has made abandonment virtually the only course open.

The Chicago, Peoria & St. Louis is only one of a number

of railways which have been forced to abandon operation. Its comparatively greater length and the fact that it serves almost exclusively one of the richest agricultural portions of the state of Illinois, makes its case stand out from the rest. Most roads and pieces of roads which have been abandoned have been located in parts of the country which were thinly populated and on which few industries had been located. The C. P. & St. L., serving a considerable number of large and small communities, and traversing a highly developed and richly productive agricultural and mining region, will, if abandoned, place the burden of lack of transportation upon a hitherto unequalled number of people. The fact that the order of the Interstate Commerce Commission, permitting the abandonment of the railway, was dictated in fairness to the road's owners does not lessen and does not relieve the misfortune of the patrons. No accurate forecast as to the effect on the communities along the line of the C. P. & St. L., in the form of depreciated property, can be made, but some idea can be gained by an examination of the territory the road serves.

General Survey

The 250 miles of main and branch lines of the Chicago, Peoria & St. Louis traverse ten counties in the state of Illinois, and enter 35 cities and villages. Of these 15 are served



These Grain Elevators at Oakford, Ill., Will Be Without Transportation

by the lines of other railways, while 20 are served exclusively by the C. P. & St. L. Among the larger cities on its line are Peoria, Springfield, Alton, Jacksonville, Granite City, Pekin and East St. Louis. All of these are served by several other roads. Of the towns not on other lines, the largest is Athens, with a population of 1,440. The total population tributary to the line, according to Interstate Commerce Commission figures, is 372,241.

The 20 towns reached by no other railroad are from one to thirteen miles distant from the nearest stations on other roads, the average distance being 6.66 miles. In nearly every instance the roads leading from these towns are of dirt, unsurfaced, so that any effort to replace rail transportation with trucking over the highways will meet with difficulty. It was estimated at the hearing before the Interstate Commerce Commission, that these roads are passable an average of only nine months in the year, the mud being so deep during the remaining three months that a heavy truck cannot be operated. The fact that the Illinois State Journal, a daily

newspaper of Springfield, Ill., distributes its papers to villages in the southern part of the state from a truck which is operated each morning over the tracks of the Chicago, Peoria & St. Louis indicates the uncertainty of highway truck operation.

The territory traversed by the line, as has been noted, is a rich agricultural and mining region and nearly every village on the line has one or more grain elevators. The accompanying photographs indicate the modern type of elevator typical of those along the line. In addition to the traffic derived from the farmer shippers, there has been an extensive movement of coal which is mined along the lines of the C. P. & St. L. It was testified at an Interstate Commerce Commission hearing that the road is the exclusive carrier for 49 grain elevators, 6 coal mines and 21 other industries. A few of these at competitive points could be served, with little expense, by other roads, but nearly all would have to go much farther for their transportation.

The traffic handled by the road represents to a great extent the traffic created by the productiveness of the towns served exclusively by the road, since competitive business has been almost entirely lost. In 1921, the last year for which traffic figures are available, the tonnage of bituminous coal originating at and destined to points on the line, was 139,629 tons while the tonnage interchanged with connecting carriers and moving over other lines was 269,031 tons. The local grain traffic was 46,069 tons and the interline grain traffic was 160,562 tons. The local livestock tonnage was 20,713 tons while the interchange tonnage was 3,725 tons. Other commodities of which a comparatively large tonnage was handled are lumber, petroleum, gravel, hay, cement, brick and flour.

In the event of abandonment of the road, only a small portion of this tonnage could economically be offered transportation. The inevitable result would be the closing down of the industries thus affected.

The monetary loss to patrons of the road, which will follow abandonment in the form of depreciated values of property and industries, will obviously be very great. In many instances, removal of rail transportation will make the continued operation of grain elevators and other businesses impossible, reducing their valuation to the amount which could be secured for them as scrap. Citizens of the four towns of Palmyra, Modesto, Hettick and Chesterfield on the lines south of Springfield, estimate that their losses from depreciation will be nearly \$6,000,000. Proportionate losses will occur to the people and business of every other town not served by other railroads. It is estimated by the Mason County Farm Bureau that the depreciation of farm land in Mason County will be \$30 per acre on 120,000 acres, making a total depreciation of \$3,600,000. B. H. McFadden & Son, a company which operates six grain elevators served exclusively by the Chicago, Peoria & St. Louis, estimates its potential loss at \$100,000. A brick manufacturer at Dow who has a plant valued at \$60,000 claims that he will lose the entire investment. The Federal Smelting Company, which owns a lead smelter at Federal, states that it will shut down in the event of abandonment, throwing its 250 employees out of work.

Losses of Individual Towns

The characteristics and potential losses of individual towns may be taken as representative of those of the remainder on the line. Palmyra has a population of 978 and is served exclusively by the Chicago, Peoria & St. Louis, as are the other towns mentioned. It has one grain elevator valued at \$28,000. In the territory about Palmyra are approximately 40,000 acres of farm land. The industries in the town itself, aside from the grain elevator, are one lumber yard, two banks and seven business houses. There is also a station of the Standard Oil Company. The tonnage originating in

Palmyra annually is about 6,000 tons. The estimated total depreciation to property values in and around Palmyra is over \$2,000,000. Since Palmyra is ten miles from another railroad and the intervening roads are poor, abandonment of the C. P. & St. L. will probably be a death blow to the town.

Modesto has a population of 463. In it are one grain elevator, one lumber yard, 13 business houses and 32,000 acres of tributary farm land. The traffic originating at this point annually is about 5,550 tons. The estimated total depreciation is \$1,575,000. It is eight miles from another railroad and will suffer as much as Palmyra if deprived of its railroad transportation.

Chesterfield has a population of 440. In it are two grain elevators and a number of business houses with a total value of \$129,000. Its tributary farm land is valued at \$2,560,000.

The traffic originating at Chesterfield each year is about 3,900 tons. Abandonment of the railway will depreciate property in this territory \$1,000,000, it is estimated. Chesterfield is four miles from another railroad.

Loami, with a population of 530, has a grain elevator, a lumber and coal yard and 10 business houses. Four livestock shippers turn over an average of four or five cars of livestock weekly to the railroad. The traffic originating in Loami is about 3,600 tons annually. It is three miles from the nearest railroad.

Athens has a population of 1,440 and is the largest town on the C. P. & St. L., which is not served by any other railroad. In Athens are two coal mines, two grain elevators, one lumber yard, and 12 business houses. Milk shipments average 2,000 cans a month. There

is also a producing coal mine. The traffic originating in Athens aggregates about 100,600 tons annually, nearly all of which is coal. The town is three miles from another railroad.

Oxford has a population of 490 and is nine miles from another railroad. In this town are two grain elevators and several business houses. There is a considerable shipment of milk and livestock from this point. The traffic originating in Oxford is around 8,300 tons a year.

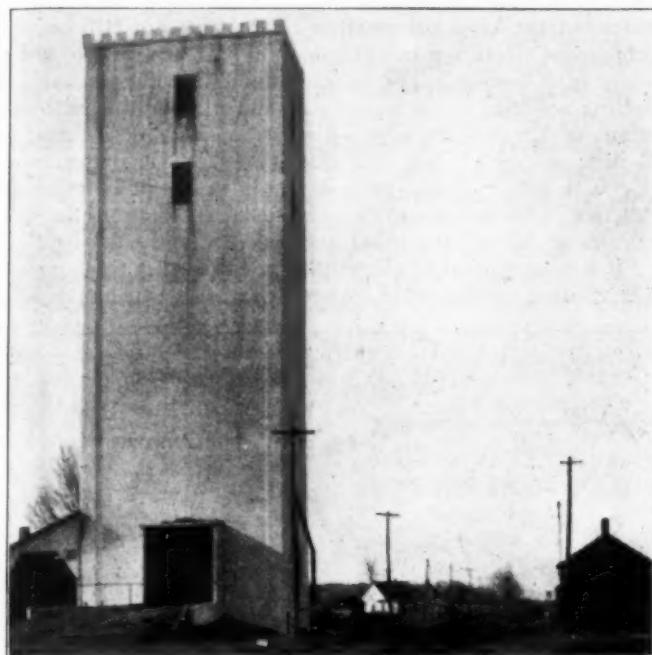
Forest City has two grain elevators and annually originates about 6,200 tons of freight. Manito has two grain elevators and two fertilizer plants and ships annually about 30,300 tons of freight. Literberry, with a population of 158, has a grain elevator, several business houses and a lumber yard. It ships about 3,200 tons of freight each year. Chanderville, with a population of 1,050, has two grain elevators and ships about 10,400 tons of freight annually.



The C. P. & St. L.

The town of Bath, with a population of 658, has only one elevator. It is the location, however, of one of the most exclusive hunting clubs in the state. On account of the poor roads, the wealthy Chicago members of the club will experience great difficulty in reaching it in the event of the abandonment of the railroad.

Other industries served exclusively by the Chicago, Peoria & St. Louis are the Illinois Powder Company at Grafton,



A Modern Concrete Elevator on C. P. & St. L.

which ships 10 carloads daily, a coal mine at Andrew, a coal mine at Cantrall, a brick factory at Petersburg and grain elevators at 28 towns not previously mentioned.

Effect of Abandonment

The statements of property owners along the line of the C. P. & St. L. indicate the disastrous effect financially which the abandonment of the road will have. The manager of the Fidelity Co-operative Grain Company at Fidelity, said that

ciation of land values, which will be a direct loss to the farmers, at over \$900,000. The total area in Jersey County which will be affected is 97,280 acres, with a present value of over \$6,000,000.

The town of Grafton, although located on the Mississippi River, will be hard hit in the event of the abandonment of the road. In it are located the Equitable Powder Manufacturing Company and the Illinois Powder Manufacturing Company, the latter representing an investment of \$700,000. These two concerns alone, whose output averages over 50 carloads a week, will be left entirely without means of transportation except by the river.

F. B. McFadden, the owner of six elevators along the line, estimates that his investment of \$100,000 in the elevators will be entirely lost as the distance the farmers will have to haul their grain, if the elevators they now use are left without transportation service, will be prohibitive. The roads connecting the towns on the northern part of the line are said to be so poor at many times of the year that some of the towns, particularly Saidora, will be isolated from any heavy traffic.

Louis P. Fisher, the owner of a coal mine at Cantrall, estimates the value of his plant at \$25,000 at the present time, while without transportation, he states that it will be worth only \$5,000. Other larger mine operators will suffer greater losses, he said.

These statements of business men indicate that abandonment of the road will mean the closing down of their establishments. They cannot carry on their businesses without dependable and adequate transportation and the condition of the roads in Illinois is such that daily truck operation is impossible for most of the towns which would be affected by the abandonment of the railroad.

The effect of the abandonment on the storekeepers in the town will be equally unfortunate. The merchants are dependent almost entirely on shipments from outside points to maintain their stock. Without the railroad these shipments will have to be brought in by truck and, as has been shown, this will be extremely difficult, if not impossible, during a considerable part of the year. Many will find it necessary to close their doors. Even upon individuals, the abandonment of the railroad will put a burden. While bus lines serve a few of the villages, most of them will be without passenger transportation service. In some instances, small towns along the line, which are served by other railroads, are in



A Coal Mine on the C. P. & St. L. Near Springfield

his grain elevator, representing an investment of \$7,000, will be without value except as junk. K. T. Nelson, a contractor and owner of a concrete products plant at Jerseyville, stated that the value of his plant, which cost \$27,000, will be depreciated \$9,000, including depreciation of 20 per cent on land, 50 per cent on buildings and 100 per cent on switching facilities.

H. H. McClusky, president of the Farmers' Elevator at McClusky, stated that his concrete elevator, valued at \$15,000, will be practically worthless.

The Farm Bureau of Jersey County estimated the depre-

the trade territory of cities reached only by way of the C. P. & St. L., and they will be deprived of rail connection with these centers.

These figures and statements can only approximate the loss which the abandonment of the C. P. & St. L. will cause to its patrons. Only actual cessation of operation can show the entire extent of such a disaster. However, they bring one face to face with the conditions which arise when a railway cannot earn a sufficient amount to enable it to continue to maintain service. And the abandonment of this service of the C. P. & St. L. is contemplated.

Freight Car Loading

WASHINGTON, D. C.

FREIGHT CAR LOADING again dropped during the week ended April 19, continuing the slump which began on March 1 and which has since been broken by only one week of increase over the figures of the preceding week. The total for the week of April 19 was only 876,923 cars, a decrease of 81,119 cars as compared with the corresponding week of last year, although it was an increase of 170,786 as compared with 1922. As compared with the corresponding week of last year there was a decrease in the loading of all classes of commodities except l.c.l. merchandise and in all districts except the Southwestern. As compared with the preceding week, however, there was an increase in livestock, ore and miscellaneous. For the year to date the total loading is still slightly above that for the corresponding period of last year, 14,207,592 cars as compared with 14,118,428. The summary as compiled by the Car Service Division of the American Railway Association follows:

REVENUE FREIGHT CAR LOADING Week Ended April 19, 1924

	1924	1923	1922
Districts			
Eastern	213,573	242,153	164,000
Allegheny	184,003	213,559	137,190
Pocahontas	37,064	38,955	34,454
Southern	132,907	141,316	118,079
North Western	112,872	121,872	96,975
Central Western	133,151	141,925	105,972
Southwestern	63,353	58,262	49,647
Total Western districts	309,376	322,059	252,414
Commodities			
Grain and grain products	36,966	38,113	33,078
Live stock	28,335	32,558	27,968
Coal	124,750	179,781	63,364
Coke	10,953	16,010	7,600
Forest products	74,763	80,139	55,514
Ore	16,581	19,905	9,628
Mdse., l.c.l.	249,273	238,594	239,088
Miscellaneous	335,302	352,942	269,897
Total	876,923	958,042	706,137
April 12	881,299	947,271	700,155
April 5	862,096	896,375	706,013
March 29	907,548	936,274	821,808
March 22	908,651	916,818	837,241
Cumulative total since January 1	14,207,592	14,118,428	12,013,442

Car Loadings in Canada

Revenue car loadings at stations in Canada for the week ended March 19 amounted to 50,544 as compared with 53,091 in the previous week, or a decrease of 2,547 cars or 5 per cent. The largest decreases were in the Eastern and occurred in merchandise, 1,258 cars, and in pulpwood, 1,254 cars; lumber and other forest products also showed declines, the latter being more or less seasonal fluctuations. In the West coal loading continued light but grain loading showed an increase of 1,678 cars, due in part to the removal of restrictions on grain at Fort William and Port Arthur on April 10. Compared with the same week in 1923 the loadings this year showed a decrease of 2,414 cars.

For the week ended—1924

Commodity	April 5.	April 12.	April 19.
Grain and grain products	5,607	5,446	7,023
Live stock	2,371	2,326	1,961
Coal	5,742	5,632	5,288
Coke	262	176	110
Lumber	3,844	4,344	3,792
Pulpwood	3,750	3,373	2,152
Pulp and paper	1,919	1,933	1,885
Other forest products	3,107	2,700	2,678
Ore	1,102	1,311	1,200
Merchandise L.C.L.	15,332	15,099	13,888
Miscellaneous	10,886	10,751	10,567
Total cars loaded	53,922	53,091	50,544
Total cars received from connections	35,693	34,986	34,173
Total cars loaded for corresponding week, 1923	47,930	52,745	52,950
Cumulative loading to date—1924	....	....	836,992
Cumulative loading to date—1923	....	....	762,613

Pennsylvania Electrifies

Fort Washington Branch

AN INTERESTING DEVELOPMENT in railroad electrification, showing the flexibility of the 11,000-volt a. c. system, is the recent electrification of the Fort Washington branch of the Pennsylvania Railroad operated electrically since February 27, 1924. This single track branch extends from Allen Lane station, on the Chestnut Hill branch, which was electrified in 1918, to White Marsh station, a distance of 6.2 miles. The country through which it passes is rolling resulting in numerous cuts and fills with a maximum grade of 1.5 per cent over a distance of 2.6 miles; curves of 2 deg., 4 deg., 7 deg. and 9 deg. obtain, the latter being 1,200 ft. long. It was necessary only to install an overhead catenary system without any additional sub-station, the substation at Allen Lane being adequate to handle the load.

It was found that by electrifying the branch in this manner, the existing service could be handled at less expense than by



Terminal at White Marsh

steam or by any self-propelled car method, considering all fixed charges and operating expenses. The expense of constructing the overhead line was off-set by the fact that it was not necessary to provide any additional electric car equipment, the existing equipment being sufficient by proper adjustment of the train schedule. The present schedule provides six trains in each direction daily, two of which run to and from Broad Street station, Philadelphia, and the remainder terminate at Allen Lane, at which point connection is made with electric trains of the Chestnut Hill branch to and from Broad Street station. The make-up of the trains is from two to five cars.

THE NORTH COAST LIMITED, the 70-hour train of the Northern Pacific and the Chicago, Burlington & Quincy between Chicago and Puget Sound celebrated, on April 29, its 25th birthday, and the N. P. dining car cooks made a 1,500-pound birthday cake. Pieces of the cake were distributed on the train and (by mail) among ticket agents throughout the country. The piece received by the *Railway Age* measures 3 in. by 2 in. by 1 in.; somewhat smaller than the last advertising "object" received from the northwest—the 6 ft. fir log pictured in our last issue, page 1056. The ratio of bulk, as between the two, is as 1 to 173,184. However, the true comparison, of course, is not one of size but rather of artistic originality; and on this basis the two will be accepted as being exactly equal!

What Other Industries Consider a Fair Return*

Businesses Whose Risks Are No Greater Earn Twice as Much as Railroads

By Dr. David Friday

Director of Research, National Transportation Institute

HERE are over forty million people working in some gainful occupation in the United States. Rather more than ten million of these are engaged in farming. Another ten million work in factories. A million are engaged in mining. Two million of them work on the railroads. Freight rates are the prices which the railroads get for performing the transportation function involved in the industrial process. What the railroads have left after paying wages and the cost of materials—and after paying the various governments over \$300,000,000 in taxes—constitutes the return which the owners of railroad property receive for the use of their capital. In the year 1923 this return amounted to 5.1 per cent on the tentative valuation of the railroads. . . .[†]

Prices Rise While Rates Stand Still

In the years which followed the Civil War prices and freight rates had fallen together. When prices reached bottom in 1897 they were only 40 per cent of what they had been 30 years earlier. The average revenue per ton-mile of the railroads had declined almost exactly the same amount. After 1897 prices began to rise but freight rates fell slightly and remained at the depression level until 1917. For 20 years then, from 1897 to 1917, prices rose both in times of peace and in time of war, while freight revenue per ton-mile remained stationary. In 1918 the rising costs of labor and materials forced a revision of freight rates. In that year the average revenue per ton-mile was 16 per cent higher than it had been in 1900; wholesale prices as shown by the index number of the Bureau of Labor Statistics were almost two and one-half times as high. Freight rates continued to rise until 1921, thus reaching their peak in the same year in which prices fell to the lowest level of the post-war period. Thereafter freight rates fell, and in 1923 the average revenue per ton-mile was 53 per cent higher than in 1900 and 1913. Prices revived somewhat after 1921. On the average, for the year 1923 they were 90 per cent higher than in 1900, and 55 per cent higher than in 1913.

The chart shows the course of wholesale prices and of average freight revenue per ton-mile for the 30 years from 1867 to 1897, during which they fell together; and for the 26 years since 1897, during which they have gone their separate ways. The year 1885 has been chosen as 100 in

constructing this graph, because its selection gives the two lines representing the movement of prices and freight rates the most points in common, and thus makes them easy to compare. The figures which have been used in plotting the chart are also shown.

Prices Could Not Have Been Pushed

Up by Stationary Freight Rates

Naturally, in a period of such wide price movements as have occurred since 1900, there has been a good deal of confusion as to the causes which underlay their rise. A considerable part of the American public believes today that

freight rates are largely responsible for the increase of prices and for the present level of living costs. It must be obvious from the graph that prices were not pushed up by freight rates. They rose steadily while freight rates were falling or were remaining stationary; they fell when freight rates were still rising; and during 1922 and 1923, they rose again while freight rates were falling.

The cause of rising prices must be sought elsewhere than in freight rates. From 1918 to 1921, it became necessary to raise freight rates; the increase in prices had greatly increased the expenses incurred for coal, steel, equipment and

supplies consumed in operating the railroads. Rising prices had also driven up living costs until an increase in railway wages had become imperative. But here the cause runs clearly from prices to railway rates, rather than in the other direction. The present railroad rates are necessary because prices of materials are what they are; and because the prices which make up the cost of living necessitates a wage scale adequate to cover those prices. Prices rose first. They continued that rise for years before railroad rates were increased in any measure whatever.

Shippers Should Have Paid

War-Time Railway Deficits

Some unfortunate consequences followed the delay of this adjustment of freight rates to prices. One of these was the necessity of providing out of the public treasury the profits which should have been collected from the shippers of freight. Had freight rates risen with prices from 1915 to 1920, and fallen with them from 1921 to 1923, the public would have paid some ten billion dollars more in freight during the last 10 years. But it would not have been necessary to pay the railroads the \$1,696,000,000 which they received during the period of government control. The railroads would have paid additional excess profits and income taxes amounting to more than a billion and a half dollars. They would have

*An abstract of an address delivered before the New York Railroad Club on April 18.

[†]Dr. Friday here discussed the increase in capitalization and production in the basic industries, including railroads, since 1900. The output per employee in railroad work was shown to have increased more since 1900 than in any other industry. This and other points brought out in this part of Dr. Friday's address were given in detail in the First Research Report of the National Transportation Institute, published in abstract form in the *Railway Age* of January 26, page 283.

had a surplus adequate to expand their properties without borrowing additional funds; they would have been able to pay off some of their bonds instead of refunding them; and they could have paid dividends upon their stock adequate to maintain it at a price and give it an investment standing which would insure an abundant supply of capital for the transportation industry for years to come.

Instead of this, freight rates were kept at the depression level of 1897 until prices were more than twice the level of 1900 and 75 per cent above the level of 1913. The net result of this policy was that the profits of corporations other than railroads doubled between 1914 and 1916, and increased still further in 1917. During the three years 1918, 1919 and 1920, they were twice as large as they had been during an average pre-war year. In the depression year of 1921 they fell to the pre-war level. But in 1922 profits stood at a point 50 per cent higher than in the pre-war period; and for 1923 they were again almost twice as high.

Low Freight Rates Encouraged Inflated

Value of Farm Lands—Cause of Farmer's Plight

In the field of agriculture low freight rates contributed to the forces which brought about a rise in land values such as the world never dreamed of. In 1900 the value of all farm lands in the United States exclusive of buildings was \$13,000,000,000. This value had resulted from all the efforts expended since the country was settled almost three centuries ago. By 1910 this land had risen in value to \$26,000,000,000. In 1920 it stood at more than \$54,000,000,000. Since that time it has declined about 25 per cent and stands now at slightly over \$40,000,000,000. The wild speculation created by this situation has placed our agricultural community under a burden of debt which has produced the most virulent discontent and which will leave a mark upon our industrial and political life for a decade or two to come. Higher freight rates would have prevented this in some measure. It would have reduced somewhat the profits of the land speculator who has become a retired farmer. It would likewise have decreased the income and excess profits taxes which these people paid, and which the government turned over to the railroads to the tune of \$1,696,000,000 as compensation for the use of their property. But the profits of the railroads would have been adequate to compensate them without resort to the public treasury and they would themselves have contributed taxes to the federal treasury. Much of the misery and dissatisfaction now extant would have been avoided by a timely adjustment of freight rates to prices.

Prosperity General—All

Producers Should Share in It

For 25 years this nation has had an unprecedented growth in wealth and well-being due to increase in our productive output per worker and per unit of population. Naturally such a period of prosperity and increase in well-being as measured by the abundance of the good things of life has brought ample returns to capital and enterprise engaged in the prosecution of industry. Throughout this period we have done lip service to the principle that all capital engaged in the service of the public was entitled to a fair rate of return. If by a fair rate of return we mean the return which capital

engaged in industry generally receives, then it is clear that the railroads have not received a fair return. They have lagged far behind other industries which render no greater

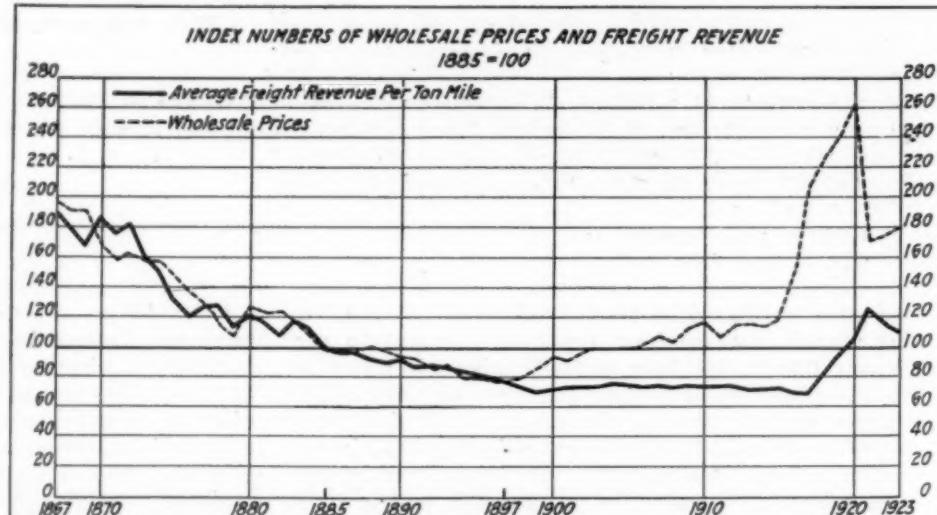
Year	INDEX NUMBERS, 1867-1923		Year	INDEX NUMBERS, 1867-1923	
	Freight	Prices		Freight	Prices
1885 = 100					
1867	190.4	197	1897	78.9	78
1868	179.0	192	1898	74.5	81
1869	169.0	191	1899	71.6	87
1870	186.8	169	1900	72.1	94
1871	176.9	159	1901	74.2	92
1872	182.6	163	1902	74.9	98
1873	159.5	159	1903	75.5	100
1874	150.3	158	1904	77.2	100
1875	140.5	149	1905	75.8	100
1876	120.4	137	1906	74.0	103
1877	127.2	129	1907	75.1	109
1878	128.1	115	1908	74.3	105
1879	114.0	107	1909	75.5	114
1880	121.8	127	1910	74.5	118
1881	117.5	123	1911	74.9	108
1882	109.0	125	1912	73.6	115
1883	119.1	118	1913	72.1	116
1884	112.3	108	1914	72.5	114
1885	100.0	100	1915	72.4	118
1886	98.8	97	1916	70.7	148
1887	97.3	98	1917	70.7	207
1888	93.1	101	1918	84.0	227
1889	91.2	98	1919	96.0	241
1890	93.1	94	1920	104.1	263
1891	88.5	93	1921	126.1	171
1892	88.8	87	1922	116.3	174
1893	86.8	89	1923	110.6	180
1894	85.1	80			
1895	83.0	81			
1896	79.7	78			

service to the public and which are no more fraught with risk than is the transportation industry.

Manufacturing Industry Earned

8.5 Per Cent After Taxes in 1916-1921

This has been especially true since the great swing-up of prices which came with war demand in 1916. Naturally



From a Chart Prepared by the Research Council, National Transportation Institute

that increase in prices affected the industry which produced and sold war materials. The profits of manufacturing industries in the year 1916 were more than twice as high as in any pre-war year. For the six years from 1916 to 1921 inclusive they averaged fully 8½ per cent on their entire property, whether that property was secured with borrowed money, with money contributed by stockholders or with undistributed surplus. This was after paying all taxes of every kind, state, local, and federal; after writing off \$1,000,000,000 per year for depreciation; and deducting the losses of corporations which had a deficit. Before paying taxes they had earned about 12½ per cent. The various governments took almost one-third of this for taxes. The results of these earnings and of the dividends which they made possible are

reflected in the fair value of the capital stock of manufacturing corporations as shown by the United States Treasury for 1922. The total par value of the capital stock, common and preferred, of all manufacturing corporations in that year amounted to \$22,321,218,326. The fair value of this stock is shown by the Treasury as \$30,439,245,241. In addition these manufacturing corporations had bonded and other indebtedness exceeding \$10,000,000,000.

During the last decade the railroads of the United States had earned and received from the government under their compensation contracts during government control 4 3/4 per cent upon the figures shown in their investment accounts, or about 5 1/4 per cent on their tentative valuation. This is their net railway operating income after paying taxes but before interest on bonds. Railroad earnings after paying taxes were, therefore, only a little more than one-half the rate which manufacturers enjoyed. This difference is reflected in the fair value of railroad stocks. In the capital stock returns filed with the Treasury for 1922, the par value of all railroad stocks, common and preferred, was \$6,681,500,289. The fair value of that stock is shown by the Treasury as \$5,196,952,735. The railroads had outstanding in the hands of the public, in addition to this stock, somewhat over \$10,000,000,000 of funded debt.

Railroad Rate of Return in 1923

Only Half That of Manufacturers

According to the best information now available the manufacturing corporations of the United States in 1923 earned 9 per cent on their entire investment, after paying all taxes. The railroads of the country have earned 4.47 per cent on their investment, and 5.10 per cent on their tentative valuation.

National Banks Have Earned

Almost 10 Per Cent Since 1900

Our exact information concerning the earnings of most industries is limited to the period since income taxes have been in operation. But there is one industry for which we have a long and dependable history of profits. The earnings of national banks have been published by the Comptroller of the Currency in every year from 1870 to date. For the decade of 1870 to 1879 these banks earned 8.4 per cent upon capital stock and surplus combined, after paying all taxes and writing off all losses. In the eighties they earned 8.2 per cent. The nineties were a decade of prolonged and severe depression, and during that period the banks averaged only 6.5 per cent. But with the revival of business they earned 9.9 per cent for the decade 1900 to 1909 and 9.5 per cent for the decade ending in 1919. The year 1920 was a banner year for the banks, and their earnings rose to 12.8 per cent on their capital stock and surplus combined. For 1921 they earned 9.4 per cent. In 1922 they touched the lowest point since the war, 7.8 per cent. But in 1923 they had revived somewhat and earned 8.5 per cent.

Surely there is no need of arguing the inadequacy of the rate of return which the railroads earned, when a business fraught with no greater risk than that of banking has averaged almost 10 per cent on capital stock and surplus during the last 23 years.

Putting Meager Earnings Back in Property

Aids Public at Stockholders' Expense

Such earnings as are available for state banks during recent years indicate that they have earned even more than have the national banks. When we examine the combined earnings of all the member banks of the Federal Reserve system, we find that these earned 13.0 per cent in 1920, 10.2 per cent in 1921, 8.6 per cent in 1922 and 9.5 per cent in 1923.

The last two decades have witnessed a great political and

economic experiment in the United States. We have observed the workings of public control during a period of increasing production, of improved efficiency in every line of industry and of rising prices. Profits and the accumulation of wealth have gone on at a rapid rate during this period. The railroads during the great portion of that period remained on the rates which prevailed at the beginning. It was only after the general rise in prices had driven up the cost of materials and the cost of living for its workers, that freight rates were finally advanced in 1918. They have since receded and are today on the same relative basis, compared to wholesale prices, as prevailed in 1913. They have never, during the last two decades, received a return even approaching that which other industries earned. As a consequence the dividends on their stock have been inadequate to attract capital, and managements, in their endeavor to serve the public, have taken the meager earnings of the stockholders and employed them to furnish facilities for the public while the value of stocks declined steadily.

When the prices which the railroad receives for the services which it renders move with other prices, and when the rate of return which it receives is commensurate with that enjoyed by other industries, the railroad problem will be a long way on toward solution.

Roads Earning Over 6 Per Cent on Property Investment

WASHINGTON, D. C.

FORTY-FOUR Class I railroads in 1923 had a net railway operating income indicating the possibility of their being subject to the recapture by the government of half of earnings exceeding 6 per cent on their value, according to a statement furnished by the Interstate Commerce Commission to the Senate committee on interstate commerce, at its request, for consideration in connection with its consideration of bills to repeal section 15a of the interstate commerce act. According to the same compilation 27 Class I roads had an indicated excess net operating income in 1922 and 22 had an indicated excess for both years, while 47 roads had an indicated excess for one year or the other. The "indications" are based on the fact that the net railway operating income as reported was in excess of 6 per cent on the book value of the investment for 1922, as the investment for 1923 had not yet been reported when the figures were compiled. The returns are probably subject to other corrections and adjustments.

On the basis used the commission's statement indicates excess earnings for 1922 of \$29,989,274 and for 1923 of \$71,477,269, of which one-half would be subject to recapture according to the law. The actual returns of the roads, under the form prescribed by the commission for the reporting of excess earnings, were not due until May 1. In these the roads were to use their own basis of valuation, pending the completion of the commission's valuations, and to calculate their net railway operating income on a system basis, as well as separately by roads, as the law applies to the systems. The statement was accompanied by a letter stating it is impossible to say what will be the effect of the substitution of the valuations for book cost.

The list of Class I roads used in this statement includes 176 roads, so that even in 1923 there were 132 roads that earned less than 6 per cent on their property investment of the year before. The report also shows net railway operating income per mile of road operated for each road and the average for the Class I roads. For 1923 the average was \$4,149 and for 1922 it was \$3,296. It is interesting to note that of the 44 roads that in 1923 had an indicated excess 26 show a net railway operating income per mile in ex-

cess of the average and of the 27 showing an indicated excess for 1922, 19 were above the average, while of the 22 roads showing an indicated excess for both years 17 were above the average.

Three roads, the Columbus & Greenville, Gulf & Ship Island and Illinois Central, had an indicated excess in 1922 but not in 1923.

The roads showing over 6 per cent for either year in the table furnished by the Interstate Commerce Commission were as follows:

	Net railway operating income		Excess of net	
	Amount	Per mile	Six per cent on book value of investment	income over six per cent
Alabama & Vicksburg..	1923 \$554,723	\$3,921	.....	\$145,711
	1922 286,392	2,024	\$408,982	.....
Alabama Great Southern	1923 2,469,543	7,757	.....	935,752
	1922 1,483,909	4,661	1,533,791	.....
Atlanta & West Point..	1923 345,712	3,710	.....	48,490
	1922 230,690	2,475	297,222	.....
Atlantic Coast Line....	1923 15,496,609	3,188	.....	2,881,509
	1922 14,416,370	2,971	12,615,100	1,801,270
Beaumont, Sour Lake & Western....	1923 362,274	3,051	.....	162,709
	1922 263,608	2,220	199,565	64,043
Bessemer & Lake Erie	1923 6,862,661	30,095	.....	3,380,529
	1922 4,809,526	21,326	3,482,132	1,327,394
Chesapeake & Ohio.....	1923 19,135,359	7,496	.....	821,232
	1922 14,410,330	5,653	18,314,127	.....
Chicago, Detroit & Canada Grand Jct.....	1923 1,353,181	22,723	.....	1,088,357
	1922 837,599	14,065	264,824	572,775
Cincinnati, New Orleans & Texas Pacific.....	1923 4,856,706	114,362	.....	1,635,038
Cincinnati Northern....	1922 1,910,018	5,648	3,221,668	.....
	1923 388,257	3,429	.....	449,923
Cleveland, Cincinnati, Chicago & St. Louis.	1923 16,691,901	6,932	.....	2,292,455
Columbus & Greenville.	1922 13,747,229	5,706	14,399,446	.....
	1923 533	3	.....	.....
Detroit & Toledo Shore Line.....	1922 188,942	986	147,221	41,721
	1923 603,781	9,771	.....	268,434
Detroit, Grand Haven & Milwaukee....	1922 745,006	12,057	335,347	409,659
	1923 600,255	3,162	.....	106,659
Detroit, Toledo & Ironton.....	1922 455,339	2,399	493,596	.....
Duluth, Missabe & Northern....	1923 1,786,924	3,921	.....	223,372
	1922 158,984	1,563,552	.....	.....
Duluth, Missabe & Northern.....	1923 10,660,676	34,911	.....	7,857,366
Elgin, Joliet & Eastern.	1922 6,512,845	21,254	2,803,310	3,709,535
	1923 5,441,927	11,837	.....	2,606,086
Elgin, Joliet & Eastern.	1922 5,152,091	11,219	2,835,841	2,316,250
Fort Worth & Denver City.....	1923 2,902,039	6,360	.....	1,079,051
	1922 2,438,054	5,343	1,822,988	615,066
Georgia.....	1923 1,193,095	3,628	.....	388,494
	1922 811,838	2,468	804,601	7,237
Gulf & Ship Island.....	1923 525,355	1,708	.....	.....
	1922 1,125,851	3,661	871,110	254,741
Gulf, Colorado & Santa Fe.....	1923 3,963,151	2,076	.....	353,816
	1922 4,192,458	2,198	3,609,335	583,123
Illinois Central.....	1923 22,906,244	4,732	.....	.....
	1922 25,121,128	5,250	24,335,972	785,156
Lake Superior & Ishpeming.....	1923 389,890	11,663	.....	122,030
	1922 369,833	11,063	267,860	101,973
Lehigh & Hudson River.	1923 589,987	6,108	.....	184,126
	1922 118,015	1,222	405,861	.....
Lehigh & New England.	1923 1,262,859	5,756	.....	303,628
	1922 721,887	3,056	959,231	.....
Louisiana & Arkansas..	1923 850,188	2,813	.....	91,730
	1922 695,547	2,301	758,458	.....
Louisiana Western.....	1923 932,136	4,487	.....	326,535
	1922 854,743	4,114	605,601	249,142
Louisville, Henderson & St. Louis.....	1923 589,999	2,957	.....	69,980
	1922 526,519	2,639	520,019	6,500
Michigan Central.....	1923 19,388,175	10,409	.....	9,994,049
	1922 18,066,109	9,702	9,394,126	8,671,983
Montour.....	1923 871,081	15,157	.....	445,488
	1922 277,022	4,881	425,593	.....
Nevada Northern.....	1923 483,077	2,912	.....	292,634
	1922 187,175	1,128	190,423	.....
New Orleans, Texas & Mexico.....	1923 1,176,275	6,151	.....	83,589
	1922 1,344,567	7,032	1,092,686	251,881
New York Central.....	1923 70,667,192	10,243	.....	2,650,554
	1922 53,973,003	7,824	68,016,638	.....
Norfolk & Western....	1923 19,877,677	8,881	.....	56,142
	1922 18,624,468	8,322	19,821,535	.....
Northern Alabama....	1923 308,171	2,789	.....	43,550
	1922 203,415	1,841	264,621	.....
Pere Marquette.....	1923 7,086,372	3,166	.....	23,063
	1922 6,081,196	2,743	7,063,309	.....
Perkiomen.....	1923 345,194	8,252	.....	123,356
	1922 482,939	11,545	221,838	261,101
Philadelphia & Reading.	1923 21,813,109	19,379	.....	8,543,766
	1922 14,328,714	12,716	13,269,343	1,059,371
Pittsburgh & Lake Erie.	1923 15,574,595	66,999	.....	10,313,229
	1922 5,279,742	23,137	5,261,366	18,376
Richmond, Fredericksburg & Potowmack.	1923 2,811,335	23,902	.....	1,388,301
	1922 2,543,648	21,626	1,423,034	1,120,614
St. Louis, Brownsville & Mexico.....	1923 1,905,563	3,463	.....	921,924
	1922 1,142,882	2,168	983,639	209,243
St. Louis Southwestern.	1923 6,111,138	6,309	.....	1,496,017
	1922 5,666,588	5,850	4,615,121	1,051,467
Texarkana & Fort Smith.....	1923 854,269	8,961	.....	563,171
	1922 470,083	5,798	291,098	178,985
Union Pacific.....	1923 28,844,300	7,777	.....	6,458,120
	1922 26,621,319	7,207	22,386,180	4,235,139
Vicksburg, Shreveport & Pacific.....	1923 690,832	3,751	.....	96,250
Western Ry. of Alabama	1923 368,823	2,151	594,582	.....
	1923 505,889	3,792	.....	98,565
Wichita Valley.....	1923 492,853	3,694	407,324	85,529
	1922 406,606	1,489	.....	62,439
	1922 240,552	937	338,167	.....

Subways for Suburban Trains Proposed for New York

THE NEW YORK TRANSIT COMMISSION, which is the state's public service commission in charge of transit facilities in New York City, has made public a detailed plan prepared by Daniel L. Turner, consulting engineer to the commission, for the construction of an entirely new subway rapid transit system for the metropolitan area, based upon and acting as an extension to the suburban passenger lines of the steam railroads entering the city.

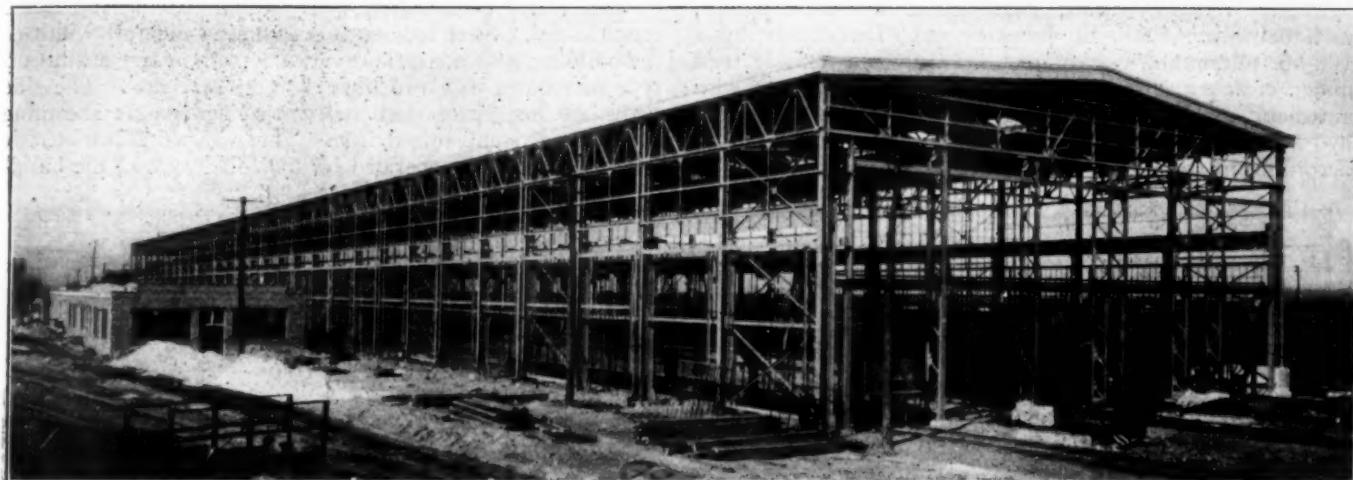
Suburban passenger service to Manhattan Island is now provided by the Pennsylvania, the New York Central, the Long Island and the New York, New Haven & Hartford. In the Borough of Brooklyn the Long Island also operates trains to its Flatbush avenue terminal. Railroads providing this service which terminate on the New Jersey side of the Hudson river whence passengers complete their journey to Manhattan by ferry or by the Hudson & Manhattan's tubes are the West Shore, the Erie, the Pennsylvania and the Central of New Jersey.

A large proportion of the commuters who come to the city daily on the steam railroads are forced to use in addition other means of transportation, i.e., ferry, Hudson tubes, trolley cars or subways, to reach their places of business. This places an added burden on local transit facilities which would be crowded even if called upon to serve only intra-city business. Moreover, many of the railroad terminals have reached their capacity and cannot handle additional suburban trains. Mr. Turner's report suggests a method for solving the congestion at railroad terminals and that on the intra-city lines; his plan is the construction of loop subway lines connecting all the railroad terminals and over which the railroad's own suburban trains would be operated through the most congested business sections of the city, collecting and distributing their own passengers to the relief of existing railroad terminals and the intra-city rapid transit lines.

The project in its entirety, exclusive of equipment, is estimated to cost \$502,000,000, of which the railroads would be asked to contribute the remainder and the operating company would provide the equipment at an additional cost estimated at \$185,000,000—a total cost of \$687,000,000 for the whole project. Under the plan suggested by Mr. Turner, the entire cost would be amortized in eight years. Passengers would be expected to pay a rate only sufficient to cover the investment of the operating company and the railroads plus, of course, operating expenses. Mr. Turner estimates that the fare to cover this would have to be about ten cents. As soon as the investment of the railroads and the terminal companies had been amortized, however, this fare could be reduced to cover only operating expenses. The various governments concerned would meet their shares by taxation.

The Transit Commission has not given formal approval to this plan, but has made it public as a starting point for the discussion of what it considers a serious problem for all the interests involved. The report is complete in detail and presents a complete analysis of passenger business, by railroads, in and out of New York. It is obtainable from the offices of the commission at 49 Lafayette street, New York.

IN ORDER that visitors from Canada may be assured of the best hotel accommodation during their stay in London attending the Empire Exhibition arrangements have been completed by the Canadian National Railways, through their London office, to assist overseas visitors in obtaining hotel accommodation. The Canadian National Railways will maintain a hotel booking bureau whose services will be free of charge to Canadians.



The Steel Frame Car Shop at Enola with the Brick and Concrete Welfare and Office Building Adjoining

Pennsylvania Builds Modern Steel Car Shops

Duplicate Designs Erected at Pitcairn and Enola to Handle Heavy Repairs on Eastern and Central Regions

USING THE SAME general design, the Pennsylvania has installed shops at Enola (Harrisburg), Pa., and at Pitcairn, for heavy repairs to steel cars. The capacity of each shop is approximately 33 cars a day, the majority of the cars turned out being, technically, new. Each unit is completely equipped with facilities of the latest type, a feature of which is the large number of traveling cranes and electric trolley hoists on movable bridges. Each car repair unit

is technically new. The output at the present time is about 25 or slightly less cars a day, as the cars in the worst condition are being handled first. As the work is caught up, it is expected that the output will increase to over 30 cars a day. No minor repair work is handled at these shops.

Each unit is laid out to operate on the progressive system, the arrangement being such that the bad order cars enter at one end and leave at the other, fully repaired and ready for the paint shop. At Enola, the old car repair shop has been converted into a paint and air-brake shop to which the cars are routed as they leave the new repair shop. The cars are moved in and out of the rivet cutting shed and in and out of the car repair shops by means of electric car pullers installed at each end of each building. There are two pullers at the out end of the car shop and one at each of the other points, or a total of five.

The rivet cutting shed is a rectangular structure 200 ft. long and 36 ft. 8½ in. wide, center to center of columns. It is of steel frame construction, carried on concrete foundations and divided into 10 bays of 20 ft. each. Steel trusses, supported on the ends by the sidewall columns and by a line of steel columns along the center line of the shed, are used for the roof construction. The roofing is of the slag type. The clearance from floor to bottom of trusses is 16 ft. The structure houses two tracks on 16 ft. centers and is sheathed with corrugated galvanized iron. Each track handles four cars in working position and to facilitate the cutting of rivets, platforms have been installed along the side walls and along the center row of columns. The side wall platforms are 2 ft. wide and the center one serving two tracks is 4 ft. wide. They are 6 ft. 2 in. above the floor.

The cutting of all accessible rivets is done by electric torches, oxy-acetylene torches being used on the remainder or less accessible ones. The rheostats for the electric arcs are carried on I-beams supported from the roof trusses approximately over the edge of each platform. These I-beams serve as tracks for the easy movement of the rheostats and leads as the workman moves along the side of the car. The electric equipment is housed in a 15-ft. by 55-ft. lean-to and consists of four 1,000-ampere, motor-generator sets with all necessary controls. This lean-to also houses two 3¾-in.



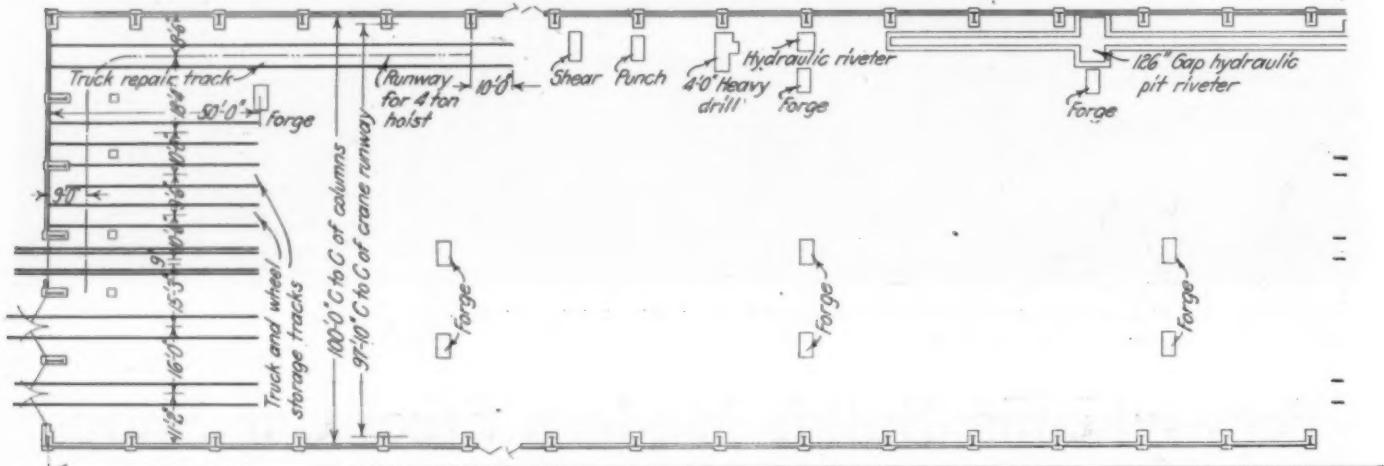
Constructing the Riveting Pit at Enola

consists of a rivet cutting shed housing 8 cars at a time, a repair shop with 36 tear-down and 18 set-up positions, a combined storeroom, office and welfare building, and other miscellaneous small structures for the storing of oil, oxygen and acetylene tanks, etc.

The repair facilities at Enola take care of all steel car repair work for the Eastern region while those at Pitcairn serve the Central region. Both installations follow the same general designs, the only difference being that one is the reverse arrangement of the other around the longitudinal center line. Both units are kept employed on repairs to steel gondola and hopper cars, the work in general being of an extremely heavy nature and requiring entire rebuilding from the trucks up. From 20 to 25 per cent of the equipment going through the shops is reclaimed while the remainder

by 12-in. vertical, triplex, single-acting, hydraulic pumps, each delivering 1,500 lb. pressure and direct-driven by a 100-hp. alternating current motor. Only one unit is used under ordinary circumstances but both are arranged with automatic controls, inter-connected with a 1,500-lb. pressure hydraulic accumulator so that one or both can be cut in according to the needs of the shops. All units are carried

of steel frame construction with column spacings of 20 ft. longitudinal. Steel roof trusses spanning the full width of the building with a clearance of 34 ft. 6 in., carry a built-up type of roofing with two rows of large skylights. The side walls are largely of steel sash with intermediate sheathing of corrugated galvanized iron. Three 15-ton Niles electric traveling cranes are operated for the full length of the build-

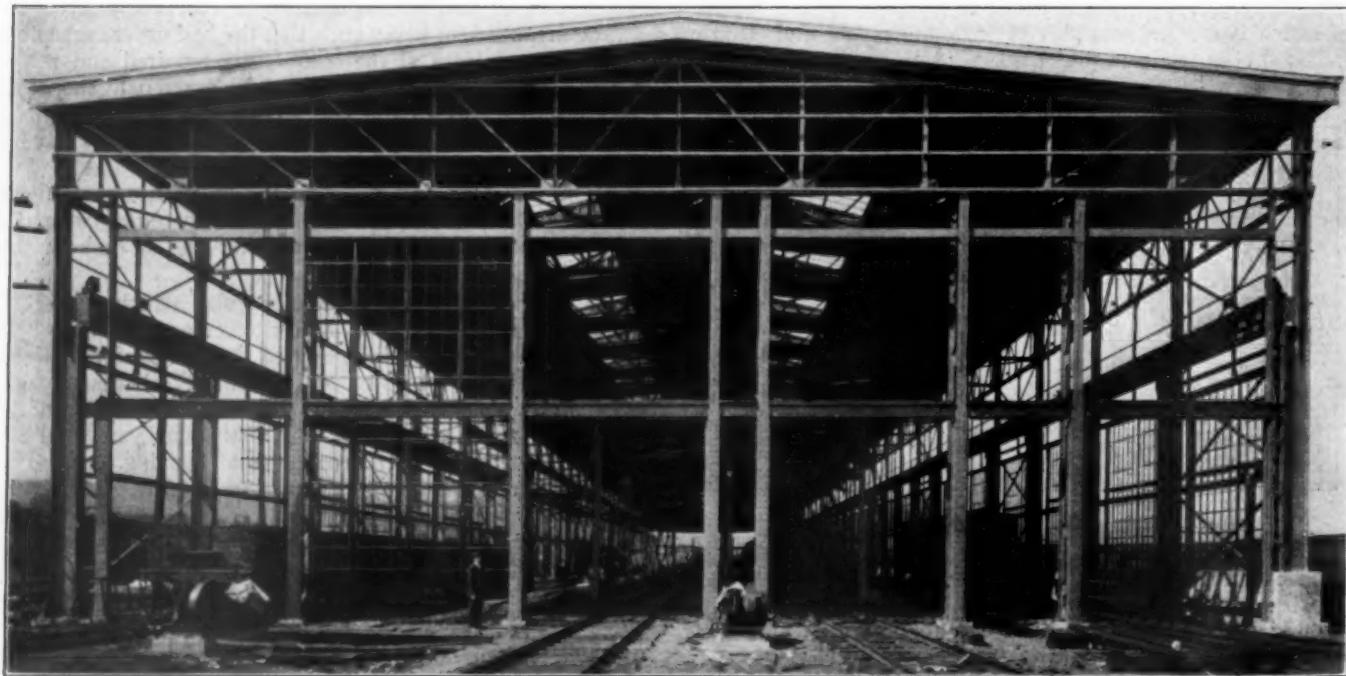


The Tear-Down End of the Shop

on concrete foundations. The floor of the lean-to is of concrete while that of the rivet cutting shed is of cinders.

Alongside the rivet cutting shed is a third track which is used for moving materials in and out; a brick and concrete storehouse for oxygen and acetylene tanks; an oil-fired annealing and heating furnace and a heavy duty straightening press. All heavy work is straightened cold in the press while

ing and over the 140-ft. extension outside of the building. The runways are carried on the side wall columns and are approximately 27 ft. above the floor level. The floor space is divided into two general sections, a tear-down division and a set-up division. The flooring in the former is of cinders while the latter is partly floored with plank and steel plates to permit of "bucking up" in the riveting of the



The General Type and Arrangement of the Structure Is Shown Clearly Here

the small work is heated and straightened by hand forging. Between the rivet cutting shed and the car repair shop is an open area 225 ft. long, served by the three tracks mentioned above and by a 140-ft. extension of an overhead crane runway running the full length of the car repair shop. The three tracks extend 50 ft. or approximately one car length into the shop building.

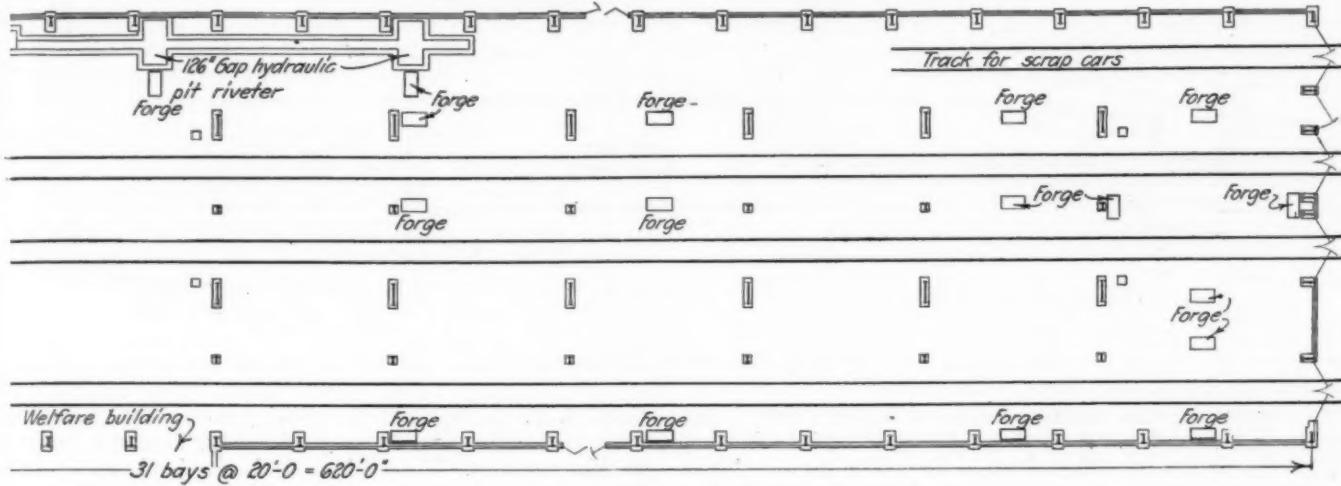
The shop building is 100 ft. wide and 620 ft. long and is

assembled or erected cars. In addition to the three tracks on the incoming or tear-down end of the building, there are three truck storage tracks 50 ft. long and one truck repair track about 110 ft. long. This truck repair track is served by a Pawling & Harnischfeger four-ton electric trolley hoist, the runway for which is extended around the end of the shop and over the truck storage tracks and the adjoining inbound and outbound material track.

The other end of the shop has three set-up tracks, each 325 ft. long and one short scrap track. The spacings of the tracks, starting from the wall next to the scrap track, is 9 ft. 6 in., 25 ft. 4 in., 20 ft., 34 ft., and 11 ft. 2 in., respectively. These three set-up tracks have a flexible overhead electric hoist and trolley arrangement, resulting in a total installation of 15 three-ton hoists. This installation consists of a

means of which a side sheet, for instance, is moved up and down and forward and backward through the gap riveter under the control of the riveter operator. The other equipment in the shop is of modern type and quite complete. A list of the main equipment follows:

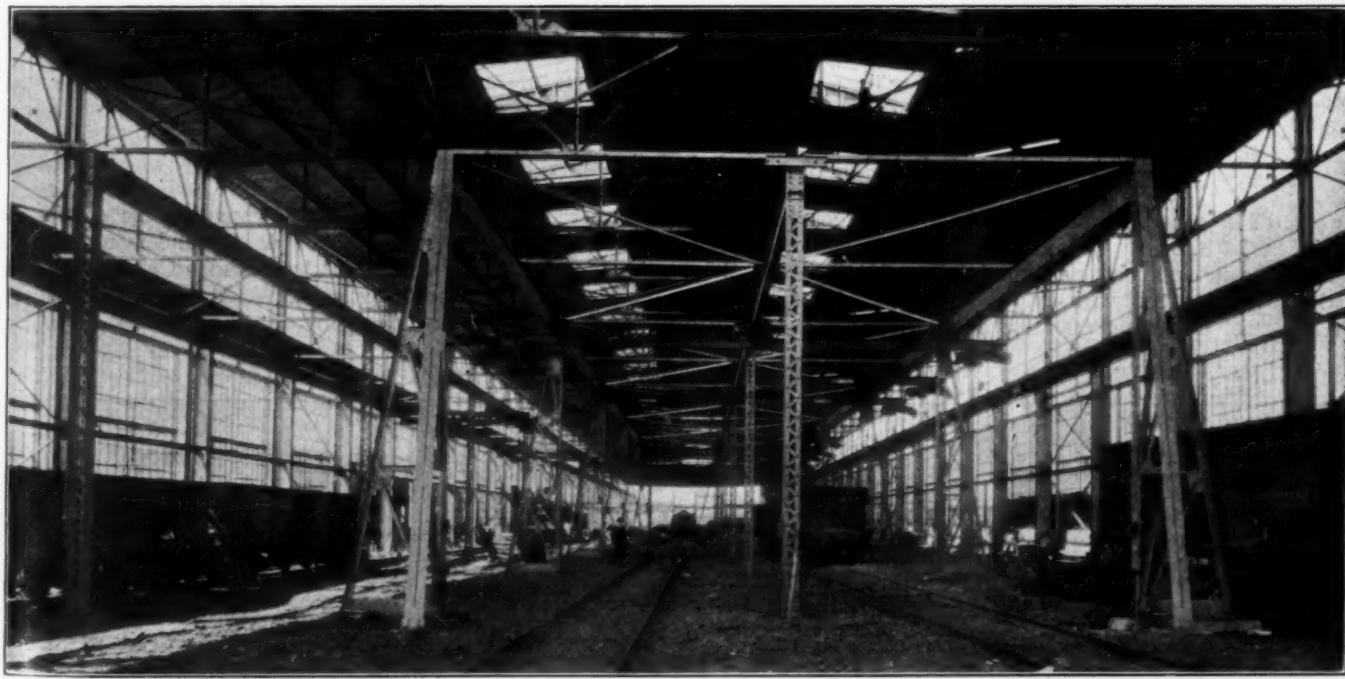
- 3—15-ton traveling cranes
- 3—3½-ton electric hoists



The Arrangement of the Set-Up End of the Shop

steel superstructure of longitudinal I-beam runways tied together and supported by four lines of steel columns spaced 42 ft. apart lengthwise of the building and between the set-up tracks. The total length of this structure is 210 ft. Five three-ton electric traveling hoists are used over each track and are operated on manually controlled bridges of I-beam section. Each bridge has a travel of approximately 42 ft.

- 1—4-ton electric hoist
- 2—1-ton pillar cranes
- 15—3-ton electric hoists
- 3—126-in. gap hydraulic riveters
- 1—24-in. gap hydraulic stake riveters
- 1—12-in. gap pneumatic alligator riveter
- 1—coupler yoke shear
- 1—plate splitting shear



Each Set-Up Track Is Served by Five Electric Hoists on Movable Bridges

or the distance between columns. The elevation of this installation is less than the crane runway, or about 26 ft.

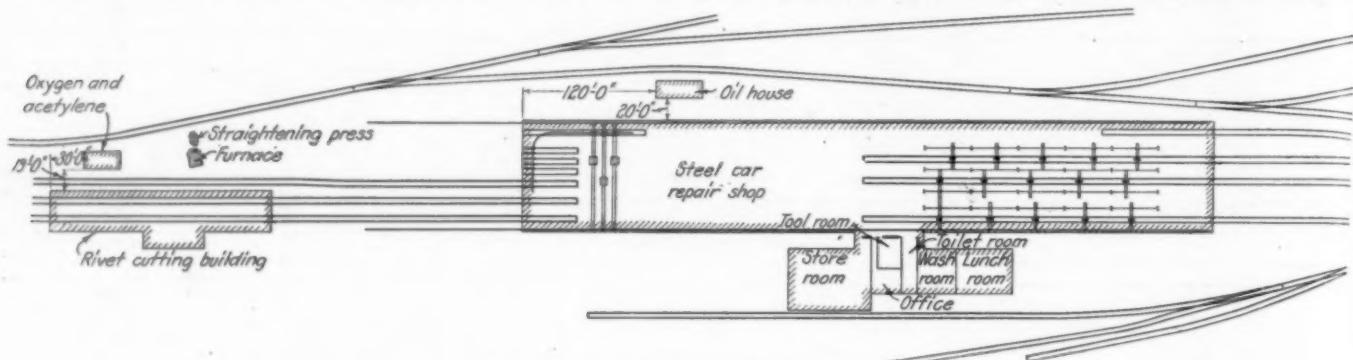
Another feature of the shop is the installation of a 220-ft. concrete riveting pit along one wall. This pit is 8 ft. deep and contains three 126-in. hydraulic gap riveters, two of which are used for side sheet work and one for end sheets. Each riveter is served by a 3½-ton electric trolley hoist by

- 1—12-in. gap punch
- 1—4-ft. heavy drill
- 1—24-in. gap vertical rapid action punch
- 5—electric winches
- 32—riveting furnaces
- 4—1,000 amp. motor generator sets
- 2—1,500 lb. single-acting, triplex pumps, electrically driven
- Miscellaneous small tools portable and fixed.

The repair shop is adjoined by a brick and concrete building which serves as an office, storeroom and welfare building. It is 202 ft. 5 in. long and 42 ft. 5 in. wide and is set out about 12 ft. from the repair shop, except for about 58 ft. 8 in. in the center section where it is connected to and a part of the repair shop. This connection gives direct access to the

to the combined lavatory and locker room which is 34 ft. 6 in. by 42 ft. 2 in. in size.

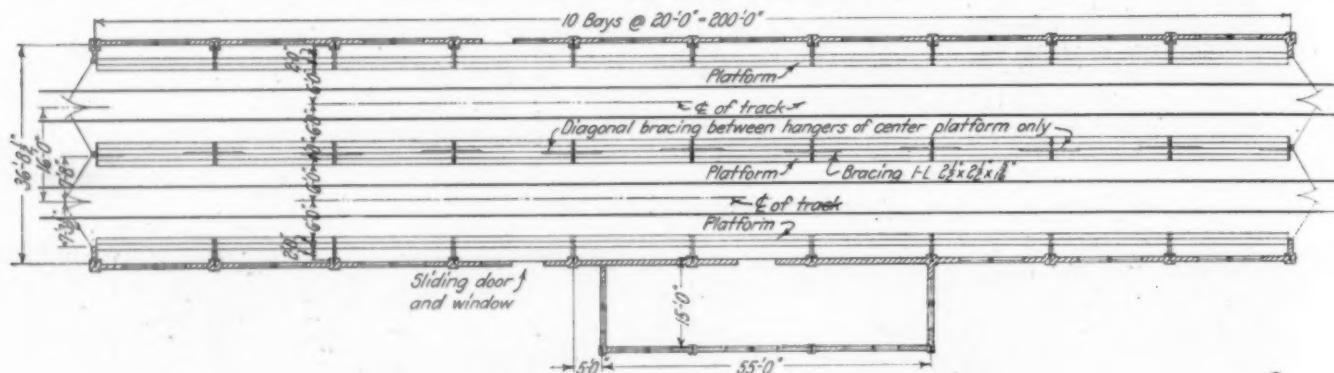
The new shops were designed by the engineering department of the Pennsylvania System, A. C. Shand, chief engineer, and H. R. Leonard, chief engineer of bridges and buildings, working in conjunction with the motive power depart-



General Plan of the Enola Car Shop

store room, the tool room, a combined lavatory and locker room and the toilets. A short corridor opening into the shop leads through to the office which is located on the far side of the building and farthest from the noise of the repair shop

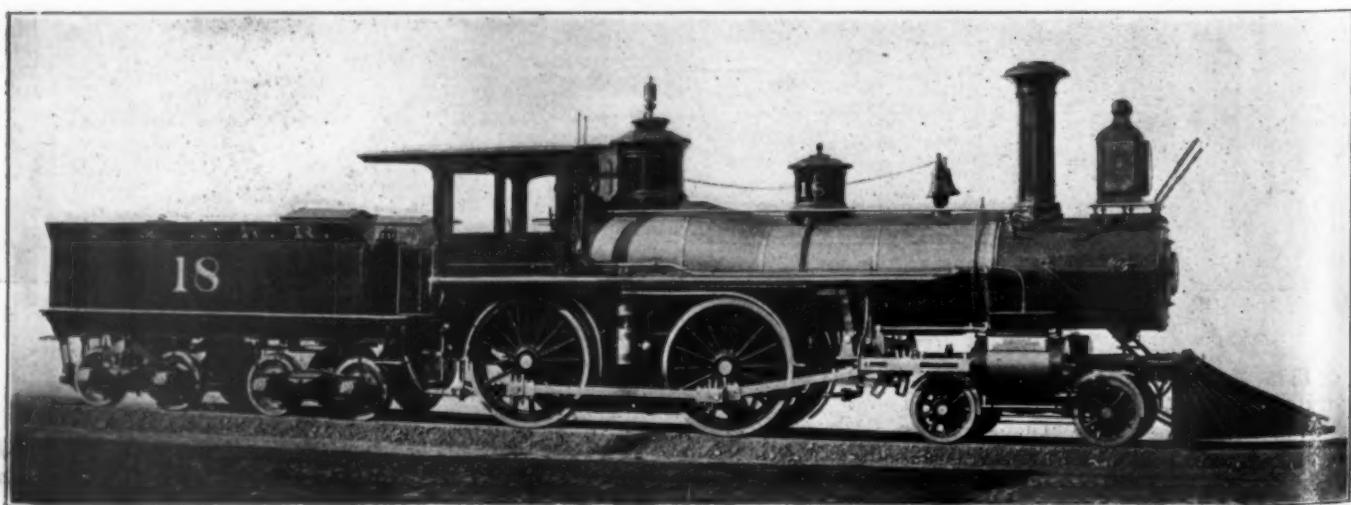
ment, J. T. Wallis, chief of motive power. The engineering work at Pitcairn was in charge of George Nauman, assistant to chief engineer. The work at Enola was in charge of W. K. Martin, engineer of construction. The contract work on both



Ground Plan of the Rivet Cutting Shed

work. The general dimensions of the store room are 42 ft. 2 in. by 73 ft. 9 in. This facility forms one end of the unit. The opposite end contains a room 49 ft. 8 in. by 42 ft. 2 in. which is equipped with tables and benches for the convenience of the employees at meal times. This is connected

shops was handled by the same companies, the contractors being as follows: Foundations, A. L. Anderson & Bros., Altoona, Pa.; steel work, American Bridge Company, Philadelphia, Pa., and building work, W. M. Sutherland Building and Contracting Company, St. Louis, Mo.



A Product of the Grant Locomotive Works, Paterson, N. J.

Senate Hearings on Repeal of Section 15A

Six Witnesses in Favor of Repeal—Supervision of Expenditures Proposed

WASHINGTON, D. C.

HEARINGS before the Senate committee on interstate commerce on bills to repeal section 15a of the Interstate Commerce Act have now been concluded with the exception of a rebuttal statement by Alfred P. Thom, general counsel of the Association of Railway Executives, which was begun on April 29, and a short statement on behalf of the short line railroads. Testimony in favor of a repeal was concluded on April 25. Six witnesses appeared in opposition to section 15a, S. H. Cowan, representing livestock shippers; F. S. Jackson, attorney for the Kansas commission; John E. Benton, of the National Association of Railway and Utilities Commissioners; R. C. Fulbright, representing the National Industrial Traffic League; Benjamin C. Marsh, representing the Farmers' National Council, and Senator Capper of Kansas. Mr. Fulbright, however, took a different position from that of others opposed to the law, explaining that many of the members of the league oppose any change at this time and also making it plain that the league itself would not favor the repeal of 15a for the purpose of causing a general rate reduction or for the purpose of enacting other statutory rules of rate-making.

During the hearing practically no attention has been paid to the provisions of the individual bills on which it was called, which range from a simple repeal of section 15a as proposed by Senators Gooding and Fletcher to the new schemes of valuation and rate-making proposed by the Dill and LaFollette bills, and the Capper bill which proposes to restore the power of the state commissions. The attitude expressed by various members of the committee during the sessions would indicate that the committee will perhaps attempt to draft a substitute for 15a, but several members of the committee have hardly been present at the hearings except once or twice. Those most regularly in attendance have been Senators Smith, Gooding, Howell and Pittman. Senators Cummins and Fess have also dropped in frequently. Discussion of ways to amend the present act has frequently included a proposal to give the Interstate Commerce Commission a greater degree of supervision over expenditures and other suggestions made have apparently contemplated the possibility of a repeal of the rate-making rule but retention of the recapture clause. Some members of the committee have expressed a desire to conclude the hearings as quickly as possible in an effort to get some action before Congress adjourns, as is now proposed, early in June.

Commissioner Frank McManamy of the Interstate Commerce Commission, who testified on April 25, in response to questions by members of the committee expressed the opinion that it seemed inconsistent to try to provide a specified fair return as contemplated by section 15a without exercising some supervision over expenditures of the railroads and that if the commission were given the power and provided with the necessary appropriation for an organization to exercise some supervision and check of railroad expenditures some very substantial savings could be produced. He outlined the results of the commission's investigations of the cost of locomotive repairs in contract shops, saying that they show a cost of \$12,000,000 for 849 locomotives in excess of what it would cost to have the work done in railroad shops, and said that many railroads are greatly increasing their expenditures for locomotive maintenance by their short-sighted policy of closing down the shops at times and then paying high prices to have the work done outside in rush periods and also that some are paying large sums in this way

which would provide them with adequate shop facilities for doing their own work. He declined to respond, however, to the evident desire of some members of the committee that he attribute the expenditures in outside shops to interlocking directorates or favoritism.

Commissioner McManamy made it clear that he was expressing his own views, at the invitation of the committee, and that he had not discussed his testimony with other members of the commission. In reply to questions asked regarding rates and the general operation of section 15a he gave only very general answers.

Benton Says Shippers "Inspired"

When the hearing was resumed on April 24 John E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners, who had previously testified in favor of a repeal of 15a, returned to the stand and made an attack on the motives of shippers and commercial organizations that have sent communications to members of Congress opposing repeal of 15a or any changes in the law at this time. After reading two editorials from the "Traffic World," one urging shippers and organizations to communicate their views to the committee and to their senators, and another criticising "political rate-making," Mr. Benton said that he was advised that telegrams and communications of this character were coming in in great volume, that at previous hearings the same sort of thing had happened, that a "very carefully organized campaign" was going on and people "dependent upon the railroad" were being asked to wire or write to their congressmen. One of the baneful effects of the great war, he said, was that "we were learning how to poison the atmosphere in which we live" and there was never so much money spent as now to create "factitious public opinion." Mr. Benton said that Congress ought to be responsive to public opinion but that it is difficult to distinguish between real public opinion and the "evidences which are produced by organized propaganda." He did "not want to imply that the editorial was bought and paid for or that it doesn't express the opinion of the man who wrote it," but he "had reason to believe" that men are going about soliciting those dependent upon transportation and car supply to write to Congress, and that this editorial in a "respectable journal" that calls itself "independent as between carrier and shipper" is a "screen to cover up activities of that sort."

"How about activities on the other side?" asked Senator Cummins. Mr. Benton asked for "just a minute" and was proceeding with his statement when Senator Cummins rose and, saying, "I don't want to wait and listen to a diatribe on the newspapers of the country that has nothing to do with this case," left the room.

Senator Howell asked to have inserted in the record a circular "appeal to lawmakers on behalf of the railroads" by the president of the National Baptist Convention. Senator Pittman objected to the editorial on "political rate-making" as a "gratuitous insult," and Senator Gooding referred to a previous editorial in the same paper regarding the appearance of Commissioner Campbell before the committee, at the hearing on the fourth section, representing views opposed to the position taken by a majority of the commission, before the majority view had been expressed. "Possibly this is the first time a commissioner has appeared for a measure in the interest of the people," he said. "Is it a crime for Commissioner Campbell to appear here in the interest of the people

but all right for Commissioner Hall to appear in the interest of the railroads, or opposed to the legislation?"

Chairman Smith then suggested that the committee take such notice as it sees fit at the proper time of "this extraneous matter" and that it proceed with the matter in hand. Nothing more was said about "the activities on the other side."

In reply to Senator Howell's question as to any hope of material reductions of railroad rates in the near future Mr. Benton said he saw no prospect in the near future of material reductions in rates while allowing the railroads a return of $5\frac{3}{4}$ per cent over and above their expenses. However, he pointed out, the commission has not construed the law as requiring that the railroads shall "at all times be earning $5\frac{3}{4}$ per cent," but, he said, roads earning more than that can say there are some other roads not earning it and "claim a right to earn on their value."

Senator Fess remarked that he saw no possibility of reduction of rates unless expenses can be reduced, to which Mr. Benton replied that the present arrangement is more or less of a cost-plus arrangement and that there is no adequate incentive to a railroad to reduce costs.

N. I. T. L. Opposes "Arbitrary Rule"

The position of the National Industrial Traffic League in opposition to the rate-making rule and the recapture clause was expressed on April 24 by R. C. Fulbright, of Houston, Tex., chairman of its legislative committee, who said the league is opposed to 15a on the ground that the recapture clause is unworkable and socialistic and that the rule of rate-making prescribes arbitrary and inflexible rules. However, he said, the league is practically unanimously opposed to such experimentation with railroad legislation as has been proposed in bills suggesting new or untried bases of rate-making and it would be unalterably opposed to a repeal of section 15a in order that other statutory rules of rate-making shall be adopted, also it does not advocate a repeal for the purpose of reducing rates at this time. It feels that if any change in the law is to be made it should be to abolish the "arbitrary" rate-making rule and the "socialistic" recapture clause, leaving a statutory recognition of the right of the carriers to a fair return under honest and efficient management. Also some of its members believe that section 15a is wise legislation while many believe no change should be made at the present time.

Mr. Fulbright stated that the commission had been created by Congress as a non-partisan and non-political body and provided with a corps of experts who are spending their lives working out the complex problems of the rates, fares and practices of the railroads, and that it should be left free and untrammelled to pursue its duties under such rules and regulations as it should find to be in the public interest. He declared that the commission is the most important tribunal of this nation, and that it functions efficiently and keeps in mind the public interest as well as the matter of dealing fairly with the railroads.

It was stated that the rate-making rule of section 15a is unworkable and uneconomic; that its application would require the commission to increase freight rates in times of depression when traffic will not bear the increase, and to decrease them in times of prosperity when traffic can best afford to pay high freight rates. Similar criticism was made of the recapture clause in that it does not give the railroads the opportunity to lay up reserves in years of prosperity to be used in years of famine. It was further stated that the recapture clause is forcing the financing of railroads by bonds and that so long as it remains in effect, there will be little incentive to finance new railroad projects by stock issues.

Mr. Fulbright stated that a large number of the members of the league had gone on record as being opposed to any modification of section 15a at the present time, and nu-

merous chambers of commerce and other organizations were named as having taken such action. He did not purport to speak for such organizations nor for any of those individual members where similar position has been taken.

Speaking for the organization as a whole concerning the action heretofore taken, Mr. Fulbright said in part:

We believe that under the Constitution the carriers are protected against confiscatory rate regulations and are entitled to a fair return upon reasonable and non-discriminatory rates and we furthermore believe that it is proper for the interstate commerce act to contain a recognition of this constitutional right, but we do not favor the arbitrary rule of rate-making or the provisions of recapture of earnings of the carriers by the government as set forth in section 15a. Such was in substance the action taken at the meeting in January, 1922, and thereafter there was introduced in the Sixty-seventh Congress a bill known as H. R. 11822, which provided for amendment of section 15a by reducing it to a simple statutory declaration that the carriers, when honestly and efficiently managed, were entitled to the opportunity of earning a fair return upon the property devoted to public use and that the commission should give consideration to such right in passing upon the charges of such carriers, but should have reasonable latitude to modify any particular rates which it might find to be unjust or unreasonable. The provisions of this measure were reported to the league members by circular and the substance thereof was embodied in the report of the committee, which was approved by the league at its annual fall meeting in New York City in November, 1922. Since that date the league has held two meetings, one at Dallas, Texas, in April, 1923, and the other in Chicago in November, 1923, and no change has been made in the position of the league with respect to section 15a. At the last meeting the matter of various bills which suggested new or untried bases of rate-making, as statutory rules to govern the Interstate Commerce Commission, was discussed and the league is practically unanimously opposed to any such experimentation with railroad legislation at the present time. This is regarded as fundamentally important in view of the fact that the carriers of this country are just now recovering from a slump which lasted through several years and should not be disturbed by any laws which might prove restrictive and which must be conceded to be of an experimental character.

Therefore, if it is considered that section 15a is to be repealed in order that other statutory rules of rate making shall be adopted, I think we can say that the league would be unalterably opposed to such action. We feel that if any change is to be made it should be to abolish the arbitrary rate making rule of section 15a and the socialistic recapture clause leaving a statutory recognition of the right of the carriers to a fair return.

So far as I have ascertained, the greater portion of the resolutions passed by the organizations mentioned have been to the effect that substantial changes in the Transportation Act should not be made at the present time. Some have been limited to the present session of Congress while others have been limited to a period of one or two years. This is doubtless due to the fact that it is felt by many business and shipping interests that some further trial should be given to the Transportation Act before substantial changes are made in the law and there is certainly, in many cases, an expression of opposition to new theories of regulation, which have been advanced in numerous measures introduced in the present and in the last Congress. On the other hand it should be stated that there are some who believe that section 15a is a wise piece of legislation as a permanent measure.

While opposed to the principles of section 15a, we think it should be said that there has been a great deal of misunderstanding of the purpose, effect and accomplishment of this law and in like manner there is a misconceived notion as to what may happen if it is repealed. Comments and criticisms from some members of Congress indicate that they are approaching the subject with the idea that the repeal of section 15a will bring about a general reduction of freight rates over the country at large. If the desire to repeal section 15a is conceived in the assumption that it will have such an effect, it is our absolute conviction that a disappointment will be in store for those who cherish this idea. To repeal section 15a will not bring about any general reduction of freight rates nor will its repeal prevent such a reduction if conditions and the commerce of the country demand it and conditions warrant it. If this Congress should repeal section 15a upon the assumption that thereby a general reduction of freight rates would be accomplished and upon finding that such a result did not obtain the next question would be as to what legislation would bring about such reduction. Now the National Industrial Traffic League is just as strongly opposed to legislative flats requiring the reduction of freight rates as we are to the adoption of statutory rates, fares and charges and arbitrary statutory rules which hedge the commission in the regulation of this subject.

At the present time there is no general demand for any general reduction of freight rates. There has been some demand in certain

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sections for reductions of rates on certain commodities and some of these are now being considered by the commission and other regulatory bodies. The consideration of these applications will go ahead whether section 15a be repealed or not and it is our judgment that the decisions reached will not depend upon or be substantially affected by the existence of this section.

Section 15a has been commonly referred to as a guarantee on the part of the government to the railroads. This has become a popular conception of the provision of the law and if such was in fact the effect of it this organization would be unqualifiedly opposed to the provision and would seek its unqualified repeal. Our opposition to the provision is not based upon this but rather upon the more fundamental ideas that the legislation is a step toward statutory rate making, is a precedent for arbitrary rules which may hamper the commission in the performance of its functions to the best interests of the shipping public, may discourage individual incentive on the part of the carriers, will discourage investment in carrier properties, will under certain conditions encourage extravagance rather than promote efficiency and economy in operation and will be a step towards government ownership which we regard as the greatest calamity which might befall the shipping public of this country.

Judge Bledsoe, in his admirable presentation before this committee on the 16th instant, laid down three propositions with respect to section 15a, with which three propositions our organization is generally in accord. He stated first that it did not guarantee to the carriers a fair return or any specific return upon their property devoted to transportation service, second, that it was not responsible for the fact that higher freight rates and passenger fares now prevail than did prevail during the pre-war times, and third, that it did not prevent the reduction of excessive and unreasonable rates to a reasonable basis.

We cannot escape the indisputable fact that during the four years which have passed since the section 15a was adopted the carriers of the country as a whole have at no time earned what is defined as a fair return under the act or under the orders of the commission in pursuance of the act. Neither can we escape the indisputable fact that some two years ago at a time when the carriers were earning far less than the standard return, the Interstate Commerce Commission held a general investigation and made a general reduction in all freight rates of the country. Furthermore, the Interstate Commerce Commission has made numerous reductions in individual rates and numerous readjustments of relationships which had been disturbed by previous general increases, in spite of the arbitrary rate making rule in section 15a. The commission therefore has at all times sought to maintain reasonable rates and to condemn excessive rates when the evidence submitted indicated such action. Now we do not say that the commission has reduced rates in every case where reductions should be made, for some of us have not been successful in all of our controversies before that body. Naturally, when we lose a case we feel as though the commission has erred, but I think it will be generally stated by all of those who keep in touch with the functioning of the commission that that body gives a sincere and honest consideration to this question and feels that it has a right to do so. This right seems to be vindicated in the decision of the Supreme Court in the Dayton-Goose Creek case.

Would Like to See Railroads Out of Politics

Our organization would like to see the railroads out of politics. We would like to see a settled condition when the shipping and investing public are not fearful that some revolutionary regulatory statute may suddenly operate to render uncertain the operations of the carriers to successfully perform their tasks. We do not believe that the railroad problem will be solved by any legislative nostrum but that hard work on the part of the carriers and proper co-operation on the part of the shippers is, after all, the only real solution of the question. However, the operation of such a law as section 15a, will in some cases undoubtedly have a tendency to make railroad employees and officials more or less extravagant in their expenditures. This will be brought about just as much by the recapture clause as it will by the arbitrary rate of return clause. The greater the expense the greater will have to be the revenue if the net return is realized. Furthermore if a carrier is prosperous and is in a position where a large portion of its earnings is to be turned over to the government there will be a tendency to expend more money and thus increase the aggregate expense which is used as a standard under the other provisions of the section. If the government is going to stand one-half of a given expenditure through its loss of the excess earnings which might otherwise accrue to it then it will be human nature for the officials of the carrier to undertake the expense just as it was human nature for firms and corporations during 1918 and 1919 to undertake large expenditures for advertising and other propositions on the theory that the government was really footing the greater part of the bill.

While the rate-making rule would require the increase of rates during the lean years at a time when the commerce of the country cannot bear the increase, and conversely, a reduction when the com-

merce is moving freely and can move on high rates, a similar vice exists with respect to the recapture clause. All railroads have years of depression, and these usually come when the farming and other industries along their lines are in a state of depression. Sometimes other forces bring about reductions which the railroads should be permitted to recoup in later years. However, under this law the railroad may lose money in one year and the very next year would have to surrender a substantial portion of its earnings to the government.

Under these conditions, the investing public is not going to be very anxious to purchase railroad stocks. Due to the fact that they will not be able to finance extensions and new lines by means of stock issues, the railroads will be forced more and more to finance all such undertakings with bonds. This has, indeed, been the case in almost every instance since section 15a became effective.

Nor do we derive any real benefit out of the provisions of the section of the statute for the expenditure of the earnings thus recaptured. It has been frequently admitted here that if a railroad can fulfill the requirements of the statute, which demand that it show prospective earning power and ample security to furnish reasonable assurance that the loan will be repaid within the time fixed therefor, and the other obligations of the carrier met in connection with such loan, in such event the railroads can go into the markets and borrow the money for 6 per cent, or perhaps less. In my judgment, it would jeopardize the investment of bondholders of a railroad for such railroad to borrow money from the government from the revolving fund. There is a federal statute which makes obligations owing to the government a first lien on the property of the debtor in all receivership or insolvency proceedings. The wording of section 15a seems to contemplate that the security for the loan will be only such security as is specifically pledged, but there is nothing in the statute sufficiently definite to repeal the provision of the other statute to which I have referred. Therefore, if a loan should be made under his statute, it would doubtless have the effect of subordinating all other outstanding mortgages of the railroad. This would jeopardize the interest of the bondholders and of equipment companies which have taken equipment obligations for a part of their sale price of equipment.

Mr. Fulbright added that his organization had taken no stand with reference to the Smith or Hoch resolutions providing for a readjustment of rates but that the Interstate Commerce Commission is giving large consideration to the idea and that in his opinion the spirit of the resolutions would be carried out without legislation.

Mere Repeal Would Not Help Farmers

Benjamin C. Marsh, managing director of the Farmers' National Council, who testified on April 24, said: "Merely repealing section 15a of the Transportation Act and leaving the present brigands in control of the railroads would be futile as far as permanent results are concerned. Congress has tinkered with transportation too often; it should treat the problem intelligently by inaugurating government ownership and unified democratic operation of the railroads. There is no other solution for the transportation problem and every railway executive and every senator knows it. All labor organizations and every real farmer organization demands this solution.

"Even were freight rates reduced to the pre-Cummins-Esch law level, as they should be, as long as the financial interests control the marketing of farm products the farmers will not receive adequate benefit from such reduction. Senator LaFollette's bill (S. 1899) instructing the Interstate Commerce Commission to fix freight rates on an honest basis is the only one of the bills before the committee that holds out much hope to the farmers. Even if that commission wanted to serve the public, the United States Supreme Court would probably block them on the valuation of the roads, as that court has been beautifully packed for that express purpose, by the addition of Chief Justice Taft and Pierce Butler.

"The Interstate Commerce Commission could do its duty in preventing interlocking directorates of graft, but it declines to do its duty. Congress is equally derelict in not repealing the Transportation Act, and starting government ownership and democratic operation of railroads, but the exposures of current investigations have dried up oil fields as a source of funds for campaign chests, so it is not prob-

able that Congress will wither up the railway financiers as a fount of campaign blessing."

Questioning whether the farmers would get relief from the repeal of 15a, Mr. Marsh said that in one year the consumers of farm products paid \$22,500,000,000 for them while the farmers received only \$7,500,000,000 and he estimated that the freight rates amounted to only \$1,500,000,000. He also declared that the farmers do not want any reductions in rates at the expense of the men who are working for the railroads.

After Mr. Marsh had been heard Chairman Smith said that the committee also desired to hear from the Interstate Commerce Commission and suggested that the commission be asked to select some one to testify. Senator Gooding, however, suggested that Commissioner McManamy be called because of his connection with the investigations of expenditures for maintenance of equipment.

When Commissioner McManamy appeared on April 26 Chairman Smith said the committee would be interested in a statement of the facts as to the operation of section 15a, but Senator Gooding again interposed, saying he would like to hear first some of the results of Mr. McManamy's experience in railroad work and as a government official, particularly in the investigation of shop work and expenditures. "I am sure," he said, "he has a very interesting story."

Commissioner McManamy on Locomotive Repairs

Mr. McManamy told how when the government took over the railroads many of them had contracts with private shops for repairs which investigation showed, he said, were costing two and a half to three times what the cost would be in railroad shops. After he became connected with the Railroad Administration he arranged to discontinue such contracts after July 1, 1918, and during the remainder of federal control no locomotives were sent to contract shops for repair without his permission. It was also found, he said, that by complete utilization of the railroad shops it was possible not only to keep up the condition of the railroad equipment but to do work for the locomotive builders to help them supply the demand for locomotives for overseas. In reply to a question as to how these contracts had originated Mr. McManamy said that it had long been the practice of the railroads to send work outside under certain conditions, such as emergencies, and because, having closed down their shops when a monthly appropriation was exhausted or in order to improve the financial showing before the close of a fiscal year, they considered it necessary when a rush came to hustle around and make contracts outside. After he had referred to the commission's reports that the New York Central and Pennsylvania had paid over \$3,000,000 each for locomotive work in contract shops after the close of federal control in excess of the cost to do the work in their own shops Mr. McManamy said that there was no evidence of anything irregular or that the prices were out of line with those generally charged for such work and he pointed out that five commissioners had dissented from the conclusions expressed by the majority. When Senator Howell asked if there was evidence that certain outside companies had been favored because of interlocking directorates Mr. McManamy replied that there was no other place to send them. As to the wisdom of the practice he said that was a matter of judgment but that he was not in accord with the position of the railroads that it was necessary. Senator Gooding asked if the commission had stopped the practice. Commissioner McManamy said that the policy still continues in some cases and that one or two investigations are still going on but that because of limited appropriations the commission has only one man assigned to them, and he may not be kept on the payroll after July 1.

In reply to a question as to whether the Railroad Administration had adequately maintained the equipment in

railroad shops Mr. McManamy stated that in the final settlements the railroads had paid about \$40,000,000 for over-maintenance of equipment, whereas they had claimed about \$328,000,000 for under-maintenance. Mr. Thom asked the committee to ask the witness to explain that the government was then in charge of all of the railroad shops and could use them in common.

Many things are desirable to be added to railroad shop facilities, Mr. McManamy said, and many are working with out of date machine tools and buildings. They should be continually following a policy of adding to and improving their shop facilities so as to be able to take care of their own work. Also they do not look far enough ahead and prepare during a dull period, when work can be done more cheaply for a rush period ahead. He said that railroads that follow a policy of keeping their shops in operation continuously show a lower cost for maintenance than others and that he knew of roads that have paid to contract shops an excess that would have paid for additions to shop facilities recommended by their mechanical departments that would have made the outside work unnecessary.

Senator Gooding asked how the witness accounted for the great disparity between the costs in railroad shops and outside. Mr. McManamy said that the overhead expenses and profit would practically account for it without any great degree of inefficiency, but that the railroad's own overhead is still going on. When the senator asked why a railroad should adopt such a policy Mr. McManamy replied that the reason given is that they have not the money at certain times. Senator Gooding indicated that he could not see how the Pennsylvania or New York Central could ever lack for "a few measly dollars" but Senator Smith remarked that he supposed "some corporations, like some people, are sometimes too poor to economize."

Senator Howell asked if the commission can inflict any penalty upon the railroads for making extravagant expenditures. Senator Smith suggested that the commission could deal with the situation in fixing the rate levels but Mr. McManamy said that to await a general rate investigation seemed to be a very slow way to regulate expenditures. When Senator Smith asked if the commission has the facilities and the men to ascertain directly the facts as to expenditures Mr. McManamy said it has men that can do it but not a sufficient force. Senators Howell and Gooding asked if the line between maintenance and capital expenditures was not so indefinite that the railroads could get over it to charge many things to maintenance instead of to capital. Mr. McManamy replied that he thought they could do so consistently. He said he did not want anything he had said to be construed as indicating a belief in restricting railroad expenditures to a point that would interfere with efficiency, but that in many cases there would be a saving in operating costs if more liberal expenditures were made for maintenance. Asked if he would think it practicable for the commission, if proper appropriations were made, to exercise a proper supervision of expenditures so as to bring about "honest, efficient and economical management," Mr. McManamy said he had no doubt of it. He did not think the commission should attempt to exercise the functions of railway officers but that with a reasonable organization continually investigating these matters it would be possible to get such co-operation from the railroads themselves that the results would more than compensate for the expense. Referring to his own organization in the Railroad Administration Mr. McManamy said that such an organization might be maintained for about \$200,000 a year. The first thing to do, he said, would be to work out a plan and a system of co-operation with the railroads, and a force of investigators in the field and a clerical force to receive and compile data to show what was being done would be required.

Senator Howell asked a number of questions regarding

rates and recapture, asking how the commission could justify such a case as he cited of a small road that "last year was allowed a return of 33 1/3 per cent and after recapture would still have 18 per cent." Mr. McManamy said he thought it was not justified but that he was not familiar with the case. Senator Howell also cited the Duluth, Missabe & Northern, which he said the commission's statement to the committee showed had earned over 30 per cent on its property investment, which he assumed would be greater than the valuation the commission would make. Mr. McManamy said that the case of the D. M. & N., was now under consideration but that the commission has been hampered in enforcing the recapture clause because its valuation work has been delayed by reduced appropriations. Senator Howell asked if the commission ought not to require a railroad under penalty to pay over half its excess as shown on the basis of the property investment. Mr. McManamy said there ought to be a penalty for the enforcement of any law.

Senator Capper Urges Rate Reductions

Senator Capper, who testified on April 25, said that business needs efficient transportation and that the carriers must have a fair return, but that he believes the time has arrived when they can afford to give some relief in the way of lower transportation costs and that some features of the Transportation Act are impracticable and unsound. He was not urging the repeal nor a general revamping of the entire law but urged that some very material amendments should be made as quickly as possible. He had voted for the conference report which became the Transportation Act, he said, "with great reluctance" and has become satisfied from the experience of four years that it is working great injustice to shippers, more particularly to the farmers and stock men. "They simply cannot pay the high transportation costs, which are out of all proportion to the prices the farmer receives," he said. To show that the railroads have "reached a point where they can give us some relief" he put into the record a number of newspaper clippings regarding the February earnings of the roads as a whole and the high earnings of the Union Pacific and Santa Fe and some other roads for last year. Those two roads, he said, carry 70 to 75 per cent of the tonnage of Kansas. Most of the roads, he said, have got on their feet and are now able to stand some of the loss that the farmers have been bearing. The senator then filed a prepared statement.

Railroad Advertising

Mr. Thom began his rebuttal statement on April 29 but most of the time was taken up with an argument as to the propriety of railroads charging to operating expenses advertising to influence public opinion, and his main statement was postponed until May 1. B. B. Cain, vice-president of the American Short Line Association, also asked for time to make a short statement. Mr. Thom referred to the statement put into the record by Mr. Marsh, which had also been put into the hearings on the labor bill, regarding the expenditure of \$1,000,000 for advertising by the railroads in the fall of 1919 and the spring of 1920. When he said that at least three-fourths of this had been charged to corporate expenses while the railroads were still under federal control but that in his judgment it is entirely proper to charge to operation such expenses Senator Pittman declared there must be a distinction between advertising to increase traffic and that to influence public sentiment. He went into a long discussion of the subject, saying that under section 15a there is no limit to the expenditures the roads could charge up to the rate-payers and that under our form of government the proper place for the railroads to make their case is before the commission and Congress. He spoke of the railroads spending "money that is not theirs," saying that if the commission has power to allow the railroads earn-

ings for that purpose it is the duty of Congress to take it away, and that he proposed to introduce a bill to prohibit it. He said that if such expenditures are to be made they should be paid out of dividends. Senator Gooding also took up the subject, saying at first that he objected only to the "abuse" of the practice but later he agreed with Senator Pittman. He said that the railroads in Idaho had suddenly begun advertising in local papers at non-competitive points and that he was being deluged with communications urging him not to interfere with the present law. Senator Howell took a similar position, saying the railroads are spending the public's money and that in Nebraska they are sending men around to ask local business men to write to Congress opposing changes in the law. He said he could trace their movements from town to town by the bunches of letters he received and that when he had written to one man to ask the reason for the similarity of the communications he had been told it was hard to say "no" to the railroad "good fellows" and that if a man was too busy to write at their suggestion the railroad man would furnish a letter already written to be signed. Senator Gooding said there had been no complaint about propaganda until after section 15a was enacted but that the railroads can now spend the money instead of having it recaptured, and that "the vast majority of the roads are earning twice what section 15a provides for." Senator Smith took the position that the railroads "have no right to use public money to influence legislation" and suggested that possibly Congress had been remiss in not providing the commission with authority and machinery for finding out whether the railroads are economically administered. Senator Fess, on the other hand, said that since the railroads are so closely regulated by the public they ought to have a "pretty free field" for presenting facts to the public.

Mr. Thom replied that it is a necessary part of operating expenses for the railroads to defend themselves against attacks which might incapacitate them for rendering public service and that the carriers "have not gone half as far on their side as the other side." The jurisdiction of the commission is complete to advise itself on this whole subject, he said, and it requires only the power to review expenditures and exclude anything it regards as abuse before arriving at a basis for making rates. He said the railroad expenditures for this purpose are "vastly less than was spent by one labor union in 1922 in trying to prevent the railroads from operating" and pointed out that the million-dollar advertising fund referred to was only 12/10,000 of one per cent of the operating expenses for 1920. The total expenses of the railroads for advertising, he said, could not in the most remote way affect the burden on the shippers. Mr. Thom showed copies of the advertisements used by the railroads in 1919 and 1920 to show that they were not directed at specific legislation but were intended to put before the people facts regarding the transportation industry.

Referring to Senator Capper's newspaper clippings on railroad earnings Mr. Thom showed a page advertisement in the Capper Farm Press on "A billion dollar increase" in values in Kansas. This, he said, "shows that the condition of the people of Kansas is by no means hopeless just as he sees hopeful signs in the railroad situation."

THE STATE of Arizona has issued an order which makes it necessary for passengers on trains entering Arizona from California to submit to fumigation and disinfection upon arrival at their Arizona destination, while if their journey takes them through that state they will not be allowed to leave the train. The order is a precautionary measure, put into effect to curb a foot-and-mouth epidemic. Tickets will be sold in California to Arizona points on the Southern Pacific only with the provision that the buyer must submit to the disinfection process.

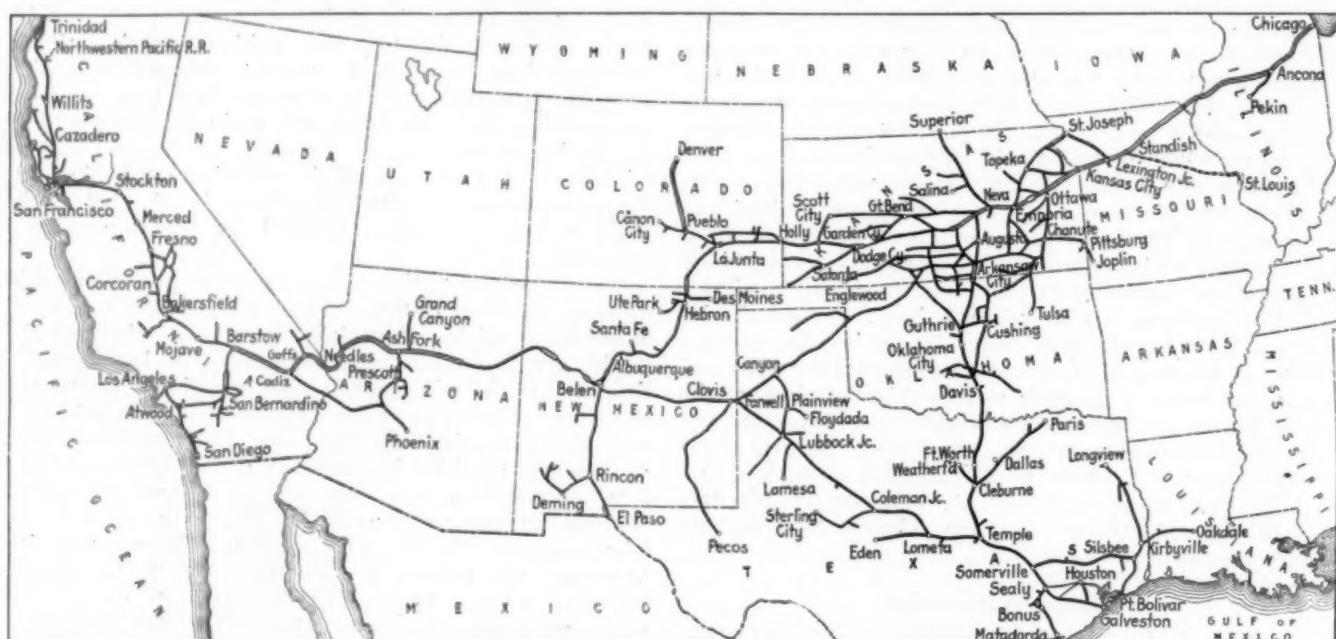
Santa Fe Earns Five Times Interest Charges

Net After Charges in 1923, \$42,087,801—Enormous Improvement Program Financed Out of Earnings

THE ATCHISON, TOPEKA & SANTA FE has been in the habit for a long period of years of earning its interest charges from three to four times over and its common dividends approximately twice over. The year 1923 was, from the standpoint of net corporate income or net after charges, the best in the company's history. The net corporate income totaled \$42,087,801. This compared with \$34,382,371 in 1922. There was one previous year in which the net corporate income exceeded the total for 1923; that was in 1919, but the result followed in that case because of adjustments applying to operations in prior years. In 1923, interest charges were earned nearly five times. The Atchison, Topeka & Santa Fe pays 5 per cent dividends on its preferred and these dividends total \$6,208,685. It pays 6 per cent on its common stock, these dividends in 1923 totaling \$13,909,245.

of the management for an indefinite period—except for possible retardation of the program during the war—has been to anticipate traffic growth and operating needs by a long period of years. There is probably no other railroad in the country that is built so much with an eye to the future as the Santa Fe. The American Telegraph & Telephone Company is praised on all sides because it and its subsidiary companies have essayed to anticipate traffic growth for a five-year period. It would be a fair question whether the telephone companies have been able to anticipate their needs with any greater regard to the future or with any greater success generally than has the Atchison, Topeka & Santa Fe.

Of course, the truly remarkable feature in the case of the Santa Fe is the fact that its enormous improvement program has been financed entirely out of earnings, and not through



The Atchison, Topeka & Santa Fe

The net corporate income covered the preferred and common dividends twice over. The balance after preferred dividends covered the common dividends twice over and with a margin of about \$8,000,000 besides.

The price of the stock—at present, slightly over par—reflects the effect of the return that its 43,000 odd stockholders receive on their money and not the value that lies behind the security. There are various people, of sufficient standing so that their views have weight, who believe that railway stockholders owning securities of successful roads should be afforded a larger participation in the prosperity of their companies than it has for some time been the practice to afford them. Such people usually refer to the policy of the Santa Fe as their classical example.

Anticipation of Future Needs

The result of the Santa Fe's low dividend rate compared to its large earnings has been interesting in many ways. As a result of the company's policy of husbanding its resources it has built up a truly enormous surplus. It has spent enormous sums for improvement to its property. The policy

the issue of stocks and bonds. As a matter of fact, the Santa Fe's annual interest charges have shown a continuing tendency to decrease for more than the past decade. Interest on bonds in 1923, amounting to \$11,323,743 was the smallest amount paid for this purpose since 1906. In 1912, in which year funded debt was the greatest it ever totaled, there were outstanding bonds of \$342,645,015 par value, and interest charges in that year, similarly the greatest they ever were, totaled \$13,940,217. At the end of 1923, the funded debt outstanding had been reduced to \$275,958,984. Reduction in the amount of funded debt has taken place through maturities, through the conversion of convertible bonds to common stock and through retirement prior to maturity. Thus, the amount of common stock outstanding on June 30, 1912, amounted to \$170,129,500 and dividends for 1912 were \$10,168,185. At the end of 1923, the common stock outstanding amounted to \$232,418,500, dividends for the year being \$13,909,245. The increase in the common stock in the period in question was practically all due to issuance in exchange for convertible bonds retired.

In 1923, common stock in the amount of \$5,366,000 was so

issued. As a matter of fact, funded debt at the end of 1923 was \$11,763,610 less than at the beginning of the year. Part of the decrease was represented by the convertible bonds which were exchanged for common stock. Of the remainder \$6,375,200 represented equipment trust notes which were retired—\$5,884,800 of them prior to maturity. These equipment trust notes were those issued in connection with the standard equipment allocated to the railroad by the Railroad Administration. As a result of the retirement of these certificates prior to maturity, the Santa Fe now has no equipment obligations outstanding whatever.

Santa Fe funded debt and stock outstanding as of December 31, 1923, and interest charges and dividends for the year are tabulated as follows:

	Outstanding as of December 31, 1923	Year 1923.
Funded debt	\$275,958,984	\$11,323,743
		Interest
Preferred stock	124,173,700	6,208,685
Common stock	232,418,500	13,909,245
Total stock.....	\$356,592,200	\$20,117,930

The Santa Fe is one of a very few roads the stock of which exceeds the funded debt or in connection with which dividends exceed interest charges. In its case in 1923, dividends were nearly double interest charges. At the end of 1923, the Santa Fe balance sheet showed a corporate surplus of \$87,742,122 and a profit and loss balance of \$165,149,179, or a combined total of \$252,891,301. Of the corporate surplus practically all was included in an item of additions to property through income and surplus.

\$50,000,000 for Improvements in 1923

The Santa Fe's improvement program was retarded somewhat by the war, notwithstanding which, additions and betterments in 1918 and 1919 alike totaled over \$20,000,000 and in 1920, over \$16,000,000. In 1923, however, it did much towards catching up on its "deferred" work. For the year there was a charge to additions and betterments to system lines of no less than \$45,731,974—approximately equivalent to the total expenditures for like purposes in 1921 and 1922 combined and in excess of the total for any other two prior years. In addition, there was approximately \$4,700,000 spent in 1923 for construction of new lines—more than in any previous year and alike equivalent to the total for 1921 and 1922 combined. This made the 1923 program total approximately \$50,000,000. This is a sizeable program in itself but the really spectacular feature is that a similar program is planned for the present year. Details of the 1924 program are given in President W. B. Storey's remarks in the recently issued annual report as follows:

"A program for improvement of the general railroad plant similar to that of 1923 is being continued in the present year. . . . As its part of the 1924 program your company is getting 5,700 new freight cars, 50 express refrigerator

cars, 78 passenger cars, and 57 locomotives, aggregating in cost about \$24,000,000 and is planning for 102 miles of second track on its transcontinental main line. Other important items on its budget are a new double track bridge over the Mississippi river at Fort Madison, Iowa, a new bridge over the Canadian river at Canadian, Tex., a new general office building at Topeka, automatic train control in Illinois as required by the Interstate Commerce Commission, extensive enlargement of shop facilities at Emporia, Kan., and San Bernardino, Cal. The total capital expenditure program is roughly \$81,000,000, of which probably about \$55,000,000 will be spent during the current year, or approximately the same amount as during the past year."

It is interesting to observe what a large proportion of the total sum for additions and betterments has been devoted to new equipment. In recent years, with the exception of 1920 and 1922, at least half of the total expenditure has been for this purpose. The following is a tabulation of the new equipment received by the Santa Fe during the past seven years with which is shown also the total sum spent in each year for equipment less retirements. The figure in the last column does not include betterments to equipment which in 1923 approximated \$1,000,000, in 1922 to \$900,000, but in prior years to smaller sums.

Year	NEW EQUIPMENT			Total less retirements			
	Locomotives	Freight Cars	Passenger Cars				
1917.....	30	\$861,576	1192	\$2,281,978	30	\$293,432	\$2,361,315
1918.....	62	3,984,929	2844	7,728,787	17	311,041	11,753,230
1919.....	93	7,208,164	2452	7,151,935	0	.....	13,707,919
1920.....	52	4,387,012	1207	4,286,974	0	.....	8,405,656
1921.....	50	3,286,389	3459	12,912,157	1	14,500	15,108,606
1922.....	2	9,500	2638	7,865,140	10	359,329	5,680,515
1923.....	89	6,745,155	7277	18,845,880	39	821,069	24,315,724
1924.....	57	.....	5700	.....	128	.....	{ 24,000,000 Total cost

The result of this expenditure for new equipment has been shown in the totals of equipment owned as follows:

EQUIPMENT OWNED

	June 30, 1914	Dec. 31, 1917	Dec. 31, 1923
Locomotives—No.	2142	2069	2160
Average Tractive effort.....	33,290	34,751	43,018
Freight cars—No.	69,366	68,278	79,.....
Passenger train cars—No.	1,653	1,669	.....

It is of interest that the number of locomotives has shown only a slight increase since 1914. The average tractive effort per locomotive, however, has increased nearly one-third. There has been a substantial increase in the number of freight cars, a decrease in the number of passenger train cars.

Santa Fe net operating income in 1923 totaled \$46,362,272 as compared with \$40,003,402 in 1922, an increase of 16 per cent. Revenue tons in 1923 were 17.6 per cent greater than in 1922, and the largest in the company's history. Revenue ton-miles exceeded those of 1922 by about 10 per cent but

ATCHISON, TOPEKA & SANTA FE—RESULTS, 1914 TO 1923

Years ended June 30	Mileage	Revenue tons carried	Revenue ton miles	Average haul	Revenue per ton-mile cents	Average train load	Total operating Revenues	Operating expenses and taxes	Net corporate income	Additions and betterments	Profit and loss surplus
1914.....	10,961	25,034,240	7,316,272,000	292	1,007	420	18.75	\$111,109,770	\$78,994,919	\$20,183,965	\$13,283,753
1915.....	11,136	26,093,880	8,263,466,000	317	0.974	442	19.71	117,665,587	81,588,870	24,130,862	7,601,349
1916.....	11,271	31,193,939	9,845,097,000	316	0.929	468	19.96	133,762,392	89,941,326	32,579,735	6,366,362
1917.....	11,270	35,277,697	12,058,609,000	342	0.927	498	20.56	156,179,121	106,204,203	39,209,073	8,340,341
Year ended Dec. 31											
1917.....	11,284	35,619,001	12,905,999,000	362	0.906	520	21.39	165,529,519	117,155,239	38,185,547	12,385,588
1918.....	11,459	31,811,576	11,931,108,000	375	1.213	557	22.23	187,658,223	146,961,821	28,348,433	21,156,434
1919.....	11,500	30,850,553	12,806,129,000	348	1.316	569	23.12	209,500,004	169,153,558	43,098,658	21,863,659
1920.....	11,584	36,850,553	10,375,038,000	357	1.544	538	22.12	254,249,002	216,706,280	37,634,752	16,168,086
1921.....	11,678	29,059,538	11,177,224,000	331	1.414	582	21.51	228,925,070	188,054,184	39,331,662	25,061,922
1922.....	11,700	33,812,696	11,177,224,000	331	1.414	582	21.51	225,124,544	185,299,890	34,382,371	21,754,321
1923.....	11,782	39,683,682	12,323,632,000	311	1.350	588	21.31	238,683,735	193,392,759	42,087,801	45,731,974

*Surplus includes:

Additions to property through income and surplus.....

\$87,430,265

Total corporate surplus.....

\$87,742,122

Profit and loss balance.....

165,149,179

Total.....

\$252,891,301

they were not as great as those of 1920 or 1917, the average haul in those years being longer. The total operating revenues in 1923 amounted to \$238,683,735, an increase of 6 per cent. With this increase of 6 per cent in total revenues there was an increase of but 3.7 in operating expenses. The operating expenses totaled \$173,076,268. These exceeded the 1922 operating expenses by \$6,171,890. There was an increase of \$6,535,434 or 13 per cent in maintenance of equipment, a decrease of \$2,561,695 in maintenance of way expenses and an increase of \$2,468,104 in transportation expenses. The expenses for maintenance of equipment in 1923 were the largest in the company's history with the single exception of 1920. The 13 per cent increase in this account in 1923 as compared with 1922, was less than was shown for the roads of the country as a whole—17.1 per cent. It was presumably due to catching up deferred work resulting from the shopmen's strike of 1922, which affected the Santa Fe to some extent but not as seriously as it did many of its neighbors. On April 1, 1924, the Santa Fe had 7.0 per cent of its cars in bad order as compared with the country's average of 7.6 per cent. The percentage of unserviceable locomotives on the same date was 13.8 per cent as compared with the country's average of 17.9 per cent.

The Santa Fe's situation as to the trend of revenues and expenses in recent years is clearly explained by President Storey in the annual report in the following words.

"A comparison of earnings and expenses with pre-war days will be of interest to the stockholders. The amounts paid to the company for equivalent services performed by it in the two years shown below will illustrate the situation:

	1915	1923
Freight service	\$1.00	\$1.39
Passenger service	1.00	1.58
Freight and passenger service combined	1.00	1.44

"The amounts paid by the company for equivalent quantities and services in the two years are as follows:

	1915	1923
Fuel	\$1.00	\$2.03
Material and supplies	1.00	1.92
Hours of labor	1.00	2.15
Taxes	1.00	3.69

"Aggregating all operating expenses, exclusive of depreciation, it costs \$2.08 for the same number of hours of work and the same quantity of fuel and materials and supplies that would have cost \$1 in 1915.

"The earnings shown by the company in the face of these figures have been made possible only by the large increase in business approximating 49 per cent in tons one mile and 20 per cent in passengers one mile coupled with expenditures for new equipment and increased and improved facilities, approximating \$195,000,000. These improvements have enabled the company to handle the increased traffic more efficiently and economically through larger train loads, improved fuel consumption, and other similar ways."

Collision at Ingalls, Ind.

THE INTERSTATE COMMERCE COMMISSION has issued a report, signed by W. P. Borland, Director of the Bureau of Safety, and dated March 10, on the collision which occurred on February 2 at Ingalls, Ind., on the line of the Union Traction Company of Indiana, when 16 or more passengers were killed, some of them being burned to death, and 35 passengers and one employee were injured. Eastbound train No. 24 and westbound train No. 21, each consisting of an electric car and a trailer, met at about 20 miles an hour and the leading cars were telescoped together for a length of 15 ft. The collision occurred in daylight, but a slight curve in the road, with lines of poles at the side obscured the views of the motormen.

This electric road has an automatic block signal system but it was not in use, the signals having been taken out of service more than a month before the collision to facilitate the reconstruction of the power line. The collision was due to an error in transmission, receipt or reading of a train

order on the part of train 24; but neither of the copies of the orders which had been given to the conductor and motorman could be found, and the inspector cannot say certainly who made the error. The motorman's copy was destroyed in the fire which broke out immediately after the collision; and the conductor's, which had been left in his grip, could not be found. Attempts to ascertain when and by whom the order was taken out of the grip were unavailing. Because of the fire it was impossible to say definitely how many lives were lost. The report, filling 15 pages, goes into much detail, and many kinds of bad practice are discussed. The inspector, in his conclusion, says that, the automatic signals being out of service, a system of manual blocking should have been put in use; also recommending automatic train control. As to the train order, the weight of evidence is against the motorman; the order told him to meet train No. 23 but the next train expected was No. 21 and he undoubtedly expected the order to refer to the first train to be met. Acting on the assumption that the order referred to 21 he calculated to meet 21 at Goul, when in fact he had no right to run against 21 beyond Mur; and he met it at a point about two miles beyond Mur.

Orders are sent to conductors and motormen by telephone and received by them in booths, but this order had not been sent directly. It was taken by the conductor of another train. The rules allow orders to be sent through an agent but the word "agent" means station agent. The closing portion of the report reads:

"The investigation disclosed many lax operating practices which, briefly, consisted of (1) trainmen taking orders for other crews, (2) trainmen checking train registers and registering for other trains, (3) the signing to an order by the trainman receiving it of the names of the crew to whom it is to be delivered, (4) poor maintenance of the automatic block-signal system, (5) the almost daily issuance of orders to disregard the stop indication of automatic signals and to proceed with caution, (6) the operation of trains at schedule speed when in the possession of such orders, and (7) the failure to include in the rule book the rules governing the operation of the block-signal system.

"In addition to the practices pointed out above, which were developed principally by testimony, the commission's inspectors personally observed the following: (1) Signal mechanisms showing lack of proper care and attention, (2) operation of trains at night at full speed over main-track switches on which the switch lights were not burning, (3) failure to have a switch connected with the signal system at a point where trains for which it is a facing-point switch frequently move at full speed on a descending grade, (4) operation of a train at night with orders to run as first section but with no signal lamps displayed owing to the electric lights used for the purpose being out of order, (5) an employees' time-table which shows one train as having two time-table meeting points with the same opposing train, (6) the use of the dispatcher's wire for the carrying on of miscellaneous personal conversations, (7) an O. K. to an order on the dispatcher's train-order book which order had not been transmitted to and repeated back by the crew of the train involved, and (8) the presence of numerous alterations and erasures in the train-order book on orders which were issued to various trains. . . .

"While it is believed the immediate cause of this accident was the failure of a crew to read a train order correctly, underlying that is the extreme carelessness and neglect shown in general operation. It is scarcely conceivable that any official having due regard for the safety of those who travel on his railway, or those who are employed thereon, should permit the existence of the conditions which this investigation disclosed. And yet General Manager Nicholl, who is the responsible operating officer of this railway, stated that he contemplated no changes in the operating practices."

Final Valuation of Florida East Coast

Value for Rate-Making Purposes as of 1916 Placed at \$46,200,000 on "Judgment" Basis

THE "FINAL VALUE" for rate-making purposes, as of June 30, 1916, of the carrier property of the Florida East Coast, owned and used, is found to be \$46,200,000 (including \$700,000 for working capital), in a report made public by the Interstate Commerce Commission on April 26, although the report is dated January 15. The value of the property used but not owned is placed at \$764,196 and that of the Atlantic & East Coast Terminal Company, owned and operated jointly by the Florida East Coast and the Atlantic Coast line, at \$1,300,000. The carrier in its protest as originally filed alleged that the value found in the tentative report, \$47,646,143, was inadequate and insufficient to the extent that it was less than \$55,000,000. At the hearing the protest was amended to claim a value of \$60,000,000, which the commission says it appears was built up by adding together the cost of reproduction new, without deduction for depreciation, the excess cost of acquisition of carrier lands, materials and supplies, and cash on hand, plus \$6,970,598 for cost of development or going concern value.

Commissioner Potter, in a dissenting opinion concurred in also by Commissioner Cox, severely criticizes the majority report, which he says he thinks is "irregular to the point of illegality in that it does not contain a proper statement of principles, analysis and method, and does not explain how and why its conclusions are reached." "It encourages some inferences," he says, "but expressly disclaims the process indicated. The report also exhibits certain specific erroneous conceptions which must have affected the figure of final value." Commissioner Potter also says that, while the commission disclaims the use of any formula, its final figure represents an addition of a sum equivalent to 5.8 per cent to the cost of reproduction less depreciation, plus present value of lands, and that in practically all of its tentative valuations a figure which averages about 5 per cent has been arbitrarily added to the figure for reproduction cost less depreciation, plus lands, to represent final value, although why such an arbitrary was adopted, he says, has never been explained.

The majority report reiterates what was said in previous valuation decisions that "we are not, and can not be bound to a mere formula in finding and fixing a value for rate-making purposes" but that such a determination is reached by the "exercise of a reasonable judgment having its basis in a consideration of the relevant facts." Summarizing its conclusions the commission also says:

Summary of Conclusions

The gravamen of the carrier's protest is that we have failed to give consideration to values other than those of physical property, and have therefore understated the true value. On the contrary, we have appraised the plant as it was on valuation date, organized, assembled, and in successful operation, and have endeavored to give due weight to all values of an intangible nature which inhere in its property, even though we have been unable to assign definite money values to them.

Where the duty of finding and fixing value reposes in a number of individuals, they may reach conclusions in which all are agreed, although each may give different weights to the various factors, and although they reach their individual conclusions by materially different processes. It is, therefore, not at all times possible for a commission to analyze its individual and composite processes of determination of value. It is, however, possible in this case to summarize, without undue elaboration, factors given consideration in determining the final value. Attention may properly be called to the fact that often there is not available as complete a record as is before us in this instance. Such matching up of figures as has been made in this

WASHINGTON, D. C.

summary results in coincidences in this case which in another might be divergencies without impairing the substantial soundness of the valuation made in either case.

The carrier's books record an investment of \$48,207,858.63 in carrier property. When there are excluded charges that, under our accounting classification, go to other accounts, the investment as restated in detail in Appendix 2 stands at \$45,185,902 as of date of valuation. Deducting \$1,709,160, the recorded cost of carrier lands, we have \$43,476,742 as the investment in property other than land. The reproduction new cost of the same property is \$43,515,318. This reproduction study, therefore, provides so close a check on the investment statement as to give assurance of approximate accuracy. The known original cost of certain segments of the property also closely coincides with investment and with reproduction-new cost. The allied Terminal Company, the final value of which is found and fixed herein, affords a similar comparison. The investment in and original cost of this property are both placed at \$603,502.87, of which \$340,012.35 represents the original cost of land, leaving \$263,490.52 for the remaining property. The reproduction new study check produces a cost of \$298,230 for the property other than land.

In this case original cost of the entire property of the carrier could not be ascertained, but the original cost of an important segment of the property, the Key West extension, is in the record. As shown on the last page of Appendix 2, that cost was \$27,984,675. This includes \$1,275,620 for certain expenses connected with land, \$98,315 for unapplied construction, materials, and supplies, and a credit of \$56,202 for revenues and expenses during construction, items not taken into account in the engineering report on reproduction. Elimination of these items brings the cost of the Key West extension to \$26,666,942, which may be compared with the cost of reproduction new of \$26,666,940. This latter figure is the cost of reproduction new of the Key West extension included in the original cost figures stated above, but does not include an item of \$614,782 for the cost of reproduction new of floating equipment, not set out in the detail of original cost of the Key West extension.

Turning to equipment, including floating equipment, we find another illustration of the close check of original cost by our cost of reproduction new. The cost of the carrier's equipment is stated in the records to be \$5,039,854. Of this amount all but \$82,312 has been verified by examination of the accounts. We find that to reproduce the same equipment new on valuation date would cost \$4,999,222.

The Key West extension, together with the equipment owned by the carrier, accounts for \$33,024,529 original cost in the \$45,185,902 of investment and for \$31,666,162 of the \$43,515,318 cost of reproduction new. As we have already pointed out, the amount of the investment in the entire common-carrier property, less that pertaining to carrier land, closely approximates the cost of reproduction new. While we are unable to find original cost of each item of property of the carrier, other than land, \$43,500,000 may be said to approximate closely the original cost of creating and improving the property as a whole. The records reveal that the original cost of carrier lands was \$1,709,160, raising the total of physical properties and lands to \$45,209,160. There is included in this total \$60,914 of donations made in the construction of industrial switches, but no value for donated lands. It is possible that some part of the \$497,124 expenses attaching to all donated lands should be added to cost of carrier lands.

In our reproduction studies we have applied unit prices based on a 5-year and, for some items, 10-year span, ended June 30, 1914. The methods employed in making these studies are so fully stated in the *Texas Midland case, supra*, as to require no explanation here other than to mention that they are intended to afford an index of the cost of producing the property during the short period of years prior to June 30, 1914. All necessary overhead charges are included. The grading quantities have been obtained from the measurement of the volume of the roadbed as it existed on date of valuation, which included not only materials moved during original construction but those taken away from the cuts by the action of the elements. This is equivalent to making an allowance for appreciation in the cost of reproduction new. In fixing a unit price for the material in the fills the fact that an excess over the present measured volume would have to be handled to provide for shrinkage and settlement due to lapse of time, the action of the elements, or other causes, was given

consideration, thus further allowing in the cost of reproduction new another element of appreciation. No depreciation of any character was assessed against the grading in the roadbed. This treatment of the subject involves a minimum of speculation and allows carriers that appreciation to which a definite cost can be assigned.

Thus far in this summary we have not referred to the cost of reproduction less depreciation arrived at in the same synthetic way as the cost of reproduction new and resulting in a total on valuation date for property other than land of \$38,569,822. The value of the lands on that date, determined in conformity with the method described in the *Texas Midland case, supra*, was \$4,406,448. This amount, added to the depreciated value of other property, produces the sum of \$42,976,270.

Valuation is not a mere mathematical restatement of original costs, investment, and estimated reproduction new or less depreciation of physical property other than land, with present land values added thereto. Our tentative valuation of the carrier took into consideration the fact that it was on valuation date a vitalized, organized, going railroad. The railroad property, separated from working capital then on hand, was given a value of \$45,500,000. This was the value found for a railroad with organized forces and attached business, an established agency of public service whose existence seems fully justified and the record of whose organization and construction is impressive in the matter of risk assumed and services rendered. The railroad provides rail transportation facilities to the east coast of Florida and has been the principal factor in the development of that part of the country. To it is to be attributed in a large measure the increases of values which have there occurred. It extends beyond the mainland of Florida and carries the national rail system to Key West and, by ferries and terminals, makes possible the transportation of freight not only between Key West and all parts of the United States, but, in unbroken carloads, between Cuba and the United States.

The carrier not only serves an important part in supplying the transportation needs of the country, but its financial record indicates a well-conceived and established business. From 1909 to 1916, inclusive, its operations were conducted at a profit. No dividends were paid, and the surplus from operations was credited to profit and loss. During the year ended June 30, 1916, the net railway operating income, including therein the debits and credits from equipment and joint-facilities rents, amounted to \$2,778,322, or sufficient to pay a return of 5.75 per cent on a capital of \$48,319,000. Its unmatured funded debt amounted to \$37,300,000, which, with \$10,000,000 par value of capital stock outstanding on June 30, 1916, produced a total of \$47,300,000. Its net railway operating income averaged over the five, four, three, and two year periods preceding valuation date produced sums sufficient to pay a return of 5.75 per cent on amounts varying from \$27,001,000 for the five-year period to \$39,720,000 for the two-year period. The substantial higher earning capacity during the year ended June 30, 1916, has already been noted.

The market value of bonds and stock can not, in this instance, be resorted to as affording enlightenment on the value of the property. On date of valuation all except nine shares, par value \$900, of the 100,000 shares, par value \$10,000,000, of the capital stock outstanding were owned by the estate of Henry M. Flagler and Mrs. Mary Lilly Flagler, the nine shares being held in the names of the directors. A majority of the bonds also were held by the Flagler estate. The road was then emerging from a period of construction and extensions. It had been financed as well as constructed almost entirely by Henry M. Flagler, and is stamped with some aspects of a personal venture.

The law requires that we report the original cost of all lands, rights of way, and terminals ascertained as of time of dedication to public use, and the present value of the same. These matters are fully covered in Appendix 2. In the investment and original cost statements hereinbefore analyzed no amount is included to cover value of donated lands and only \$60,914.64 representing donations. These were made on account of construction of industrial tracks. The land aids were extensive, however, including 611,447.65 acres of land grants. The carrier and its predecessors disposed of 604,512.90 acres of these lands for \$701,750.54. In addition to these, the carrier received 222,271.76 acres designated as donations, and of these lands sold 216,593.03 acres for \$494,736.80. There were attaching to both classes of donated lands \$497,023.97 of expenditures. The carrier also, free of consideration, received 333 1/3 shares of the capital stock of the Jacksonville Terminal Company. The value on date of valuation of all donated lands then owned by the carrier is \$2,289,199.93, of which \$2,169,576.52 represents value of carrier lands and \$119,663.41 value of noncarrier lands.

No concessions or allowances appear to have been made by the carrier on account of its having acquired lands through land grants. We find no values or elements of value other than those mentioned above.

Upon consideration of such matters as we have here summarized, as well as in more detailed disposal of the various specific protests to the tentative valuation, we reach the conclusion and find that the value for rate-making purposes of the property of the carrier owned and used for purposes of a common carrier, including \$700,000 for working capital, is \$46,200,000 and of the property used but not owned \$764,196, and that the value for rate-making purposes of the property of the Terminal Company is \$1,300,000.

The act also requires us to value investment in stocks and bonds of other companies, and notes of such companies or individuals. They are listed in Appendix 2. Such noncarrier assets do not affect the value for rate-making purposes. A supplemental report will be issued giving the value of these assets.

The carriers had claimed that no legal or economic justification exists for deducting theoretical depreciation in the absence of an accumulation of deferred maintenance and had submitted evidence tending to show that the properties were fully maintained on valuation date and that no further expenditures could economically have been made. As to this the report says that courts and commissions have accepted, as a settled practice in valuation proceedings, the deduction of the depreciation accrued in that which is theoretically being reproduced. To the contention that to the present values of their lands should be added the expenditures which the tentative valuation found would have been required for a theoretical reacquisition of them, the commission says the ruling of the Supreme Court in the Minnesota rate case is full authority for disregarding the present cost of acquisition of carrier lands and that the requirement that it be reported has now been stricken from the act. The report discusses the claim for cost of development, which was calculated on a comparison of the experience of 11 new roads during a series of years following their construction and 11 comparable old roads during the same years, and points out that such claims have previously been passed upon. "Not only are we unable to include development cost in the valuation," the report says, "but we are also unable to ascertain a separate amount to be allowed for going value." There is a discussion of the Key West extension as to which the report says "this cost and the wisdom of the venture stand unchallenged upon the record," and that the original cost of construction was considered the most reliable basis for estimating the cost of reproduction and was very largely followed. The amount assigned as working capital was reduced from \$1,431,947 as stated in the tentative valuation, which, in the opinion of the commission, is substantially in excess of the carrier's normal requirements. The excess of \$731,947 of the cash and materials and supplies on hand on valuation date over the amount found necessary is considered for the purposes of the valuation as non-carrier property.

Separate Opinions

Chairman Hall, in reaching with the majority the conclusion expressed as to value for rate-making purposes, says that the treatment of other values or elements of value seems to him inadequate and of "working capital-materials and supplies" erroneous. Commissioner Aitchison, although concurring generally, dissented from the designation as noncarrier property of the greater portion of the cash and materials and supplies on hand as not warranted by the record.

Commissioner Eastman dissented, stating that in his opinion the respective rate bases as of 1916 should not exceed \$42,936,412 for the Florida East Coast and \$588,142 for the terminal company, which he arrives at as "liberal approximations of the reasonable investment remaining in the property." Commissioner Campbell also dissented on the ground that the original cost has been found only with respect to the Key West extension, saying that had the law been complied with and the original cost of the property as a whole ascertained, the figure of final value might have been different. He also expresses doubt as to whether

an expenditure of as much as \$218,000 per mile for the Key West extension could have been or could be in the public interest. "While that may have been the original cost per mile of this portion of the Florida East Coast Railway," he says, "I doubt if it should be used as the value for rate-making purposes upon which the public will be expected to pay to the owners the fair rate of return designated by the commission."

Some extracts from Commissioner Potter's dissenting opinion are as follows:

Commissioner Potter's Dissenting Opinion

Except for the disclaimer of use of formula and of having given any particular weight to any particular factors, it would be quite natural to conclude that \$46,200,000 was arrived at as the final value by adding an allowance of \$700,000 for working capital to \$45,500,000 found as the value of the other property, the \$45,500,000 being arrived at as follows:

Cost of reproduction new of physical properties....	\$43,515,318
Cost of reproduction less depreciation.....	38,569,822
Present value of lands	4,406,448

Total	42,976,270
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The final figure of \$45,500,000 represents an addition of \$2,523,730 to the figure of \$42,976,270. This addition is 5.8 per cent of \$42,976,270. It appears that in practically all of our tentative valuations a figure which averages about 5 per cent has been arbitrarily added to the figure representing reproduction cost less depreciation, plus value of lands and the resulting figure has been named as representing final value. A list of 330 carriers as to which we have found tentative final value, shows that the figures given as cost of reproduction less depreciation, plus value of lands, plus 5 per cent, correspond so closely with the tentative final values found, less cash and material and supplies, as to lead to the conclusion that the former figures were taken as the basis for arriving at the latter. The aggregate of the items for these carriers showing their cost of reproduction less depreciation, plus present value of lands, plus 5 per cent, is \$2,955,206,577. The aggregate of the tentative final values less cash and material and supplies is \$2,957,504,106. The difference is only one-thirteenth of 1 per cent in excess of the 5 per cent arbitrary. It appears that in many cases the 5 per cent arbitrary coincides very closely with 50 per cent of the depreciation found. Just what is the significance of this coincidence does not appear. Why the arbitrary which averages approximately 5 per cent was adopted has never been explained. On review it will make more difficult the solution of the puzzle of what we do and why we do it. The report in this case disclaims resort to this formula so that explanation of how the figure of final value is arrived at is not available.

The report shows that figures as to original cost agree closely with those of estimated reproduction cost. It finds that the carrier is essential and efficient, and shows that its construction was justified on the basis of original cost, and would be justified on the basis of estimated reproduction cost. There is, therefore, warrant for basing a finding of value on those figures. Analysis, principles, and rules could be stated. The case is peculiarly appropriate for such treatment and explanation of reasons. Notwithstanding this fact, the report emphatically repudiates any particular figure as having any particular significance. This is unfortunate because if the mind were to run in this case as the figures suggest, a precedent would be established that would be helpful in other cases. For instance, the same method, analysis, and reasoning would have exposed the lack of soundness in our finding in the case of the Atlanta, Birmingham & Atlantic. Apparently this fact is recognized by the majority report. To the end that no conclusion shall be drawn from this case that can be applied to others, the report points out that views of commissioners may differ as to reasons, but coincide as to conclusions.

The report, therefore, leaves a reader entirely in the dark as to how its conclusions are reached. This is basic error which should lead to condemnation in its entirety. It is incumbent on us to give sound reasons for what we do. We must apply principles and they must be applied consistently in all cases. We act arbitrarily until we announce the rules and principles which we apply. To state relation of original cost to reproduction cost is not merely an idle "matching up of figures." The results are not inconsequential "coincidences" or "divergencies." We must and necessarily do either deny or accord influence to such figures in every case. We should show how we use them in each case. We are not at liberty to accord them the same influence in all cases. We must be influenced by the results of construction expenditure rather than by amount of such expenditure. The result of a unit of expenditure in the construction of an efficient carrier that is essential and renders vast public

service is of far greater value than a similar result for a non-essential, inefficient carrier which renders less important service. Depending upon the conditions and characteristics of different carriers some are entitled to be valued at a figure that would protect original cost. Values of some are below that figure and of others above. It is inconceivable that all the railroads should so correspond in character and merit that the values of all could, to the extent our reports indicate, be based on expenditure. If, in this case, original cost, reproduction cost, reproduction cost less depreciation, value of lands, cost of lands, development cost, amount of outstanding securities, earnings, efficiency, public service, and public need, had each been specifically dealt with as a factor affecting value, and if that method were determined to be adopted for all cases, we would have taken a long step toward sound practice. Such a method applied to each case would show the weight to be assigned to different elements which would vary in different cases. The final conclusions would, therefore, vary and show inevitably what everyone knows, that some properties are of far greater value than others showing the same or greater original cost, reproduction cost, reproduction cost less depreciation, plus value of lands, and plus the arbitrary.

I think that in the case of the A., B. & A. the value of the accomplishment for a given unit of expenditure would be much less than the amount of the unit. In the case now before us, it is my view that actual expenditure should be adopted as the measure of value. I would apply this measure to lands as well as to other property. The carrier is essential and efficient. It renders indispensable public service. Original cost harmonizes with reproduction cost. Its record of earnings indicates sound financial enterprise at a value which harmonizes with its cost. On the other hand, it has not shown any special efficiency or merit indicating higher value. Though meritorious it has not demonstrated any special value above the amount invested in it. Under these circumstances I think it appropriate to apply the prudent-investment rule of protection of the expenditure in connection with it.

There should be included in expenditure the amount necessary to carry the property during its development period. Substantial expenditure was required to carry it to the time when it reached maturity. It was in the public interest that it be so carried. For these reasons we should and could conclude that it has a value corresponding with actual investment, plus carrying charges. A conclusion thus arrived at would carry convincing weight. The same test applied to the A., B. & A. would have shown less merit and less value per unit of expenditure. Other carriers, more essential and efficient, and rendering a higher degree of public service, which have enjoyed or are likely to enjoy relatively higher earnings because of their inherent merit, should be accorded a value in excess of original cost, such value according with or being above or below estimated reproduction cost.

To apply this method in all cases would make it easy to review our work, test our reasons, and determine the correctness of our conclusions.

Our most important duty is to learn what the law is, and how to arrive at value. We do not know. The courts must tell us. Valuation is a judicial function. Values must ultimately be determined by what the courts think, not by what we think. We should facilitate getting the important questions involved into the courts with the greatest possible expedition and in a way to point out the difficulties and perplexities. We are doing the opposite. We are allowing our reports to take that form which makes review most difficult, if not impossible. This case naturally gives opportunities to bring up nearly every important question involved in valuation. We reject them all. We could specifically refer to every rule and principle we apply and give our views and explain why we do what we do. If we did that the courts would tell us where we are right and where we are wrong. The whole atmosphere would clear. We, the carriers, the Congress, and the public would know where we stand and what we are doing. To go ahead as now leaving clouds of mystery over all we do, telling interested parties to take our conclusions and ask no question, is unworthy performance of the trust reposed in us. It gets us nowhere. It leaves wasteful uncertainty; makes unnecessary work, trouble, and worry for all concerned.

Proper analysis of method would perhaps show accord at certain points and thus the field of controversy would be reduced and burdens lessened. Failure to state methods and analysis so as to focus testing thought is wasteful because it elaborates unduly the study required in order to determine whether one is in accord with the final conclusion. It is not possible for the members of the commission generally to examine the record in these valuation cases. Under such circumstances, unless our reports clearly set forth and analyze the methods used in building conclusions, and show the treatment of the different elements, varying in different cases, that influence value, so that the report may be convincing in and of itself, even we, whose work the re-

port is, can not have satisfactory reason for our action. Our method is peculiarly unfair to the courts, for it throws burdens on them that properly are ours. If we would decide a few cases so as to show our interpretation of the law and make detection of our error possible, the courts could straighten us out, and we could go ahead and do our job in a satisfactory manner in most cases. It would not be necessary to take many of our reports into the courts. As we now are doing our work it will be necessary, as I see it, to take practically all of our reports into the courts. I see no escape from their being compelled to do all our work over again. This will be the natural consequence of giving conclusions and withholding reasons and arriving at aggregate figures without showing how we reach them. In justifying our valuations in court, it seemingly will be necessary to build up each case as completely as we have with our own staff to arrive at our findings. We will be required to organize extensive forces for court work, and litter courts with our records and data and the testimony which we have taken. The expense and delay will be frightful. I apprehend that the courts will send the cases to masters and that in the end they will value the carriers. In that event many millions that we have expended and required the carriers to expend, and much time and trouble will have gone to waste. Correct practices now would avoid the calamity for which we are headed.

I do not share at all the notion that it is not possible for a commission of 11 men to announce principles. Most of the uncertainties that exist would be cleared away by finding the answers to a dozen questions or so, which would involve fundamental principles. The commission could decide such specific questions and thereafter adopt in all cases the conclusions thus arrived at. These questions being answered by the commission in a specific case, our positions would be known. The courts could then pass upon those questions and our answers to them, and thus furnish us guides with which we could perform our task.

We should take a position squarely upon the question as to when and under what circumstances carriers are to be valued at original cost or less, or at reproduction cost, or more. In particular we should clear up the uncertainty as to the influence accorded to reproduction cost. We think that predominating influence is not given to reproduction cost. We may be mistaken. A careful study of all of our reports to date may be regarded as indicating otherwise. We are constantly referring to our tentative reports and using their findings in determining the amount of allowable stock issues and otherwise in our work.

We should take position squarely on questions as to the treatment of development cost, depreciation, and appreciation. We should announce whether, in our view, in valuing a property as a whole, deduction should be made from cost as a measure of value of an amount representing depreciation supposed to have taken place in particular material, and whether such depreciation is to be considered as lost in a finding of value although the carrier is essential and efficient. We should take a position squarely regarding good will, and how and to what extent it should be valued. We should make determinations as to land value so as to bring questions to the front and have determined the influence of land value in determining the value of a property as a whole.

Some of the specific erroneous conceptions which must have influenced the figure of final value, are as follows:

The carrier urges that in considering cost, investment, or other elements of value, it should have credit for approximately \$7,000,000 for carrying the property during the development period and plausible reason for accepting this figure is set forth in the report. How much of an allowance is made by the report for the fact that the property was carried during its early period in anticipation of the recognition of values which only the future could disclose does not appear. If the arbitrary of 5.8 per cent is for this purpose, there is nothing to indicate whether it is too much or too little, or the basis on which we arrive at it, or the principle we apply to this case that can be applied to others. We should take position on these questions. We should accept the carrier's method or state another. In my judgment the allowance should be a fair interest return per annum during the development period upon the investment, less the earnings of the property in the meantime.

The property had to be carried during the development period. Those who carried it are entitled as a matter of common honesty to have this carrying expenditure protected. To refuse to do so would be confiscation. The report gives the impression that in some undisclosed manner development cost was considered in arriving at the final value, but the report does not show how it was considered or with what result. With such treatment erroneous view of the law would have no effect. No one would ever know whether we really did or did not make any allowance for development cost. The parties interested and the public are entitled to know how we treat the subject, what we do about development cost, and what we think the law is, and

they are entitled to an opportunity to have the courts pass upon our method.

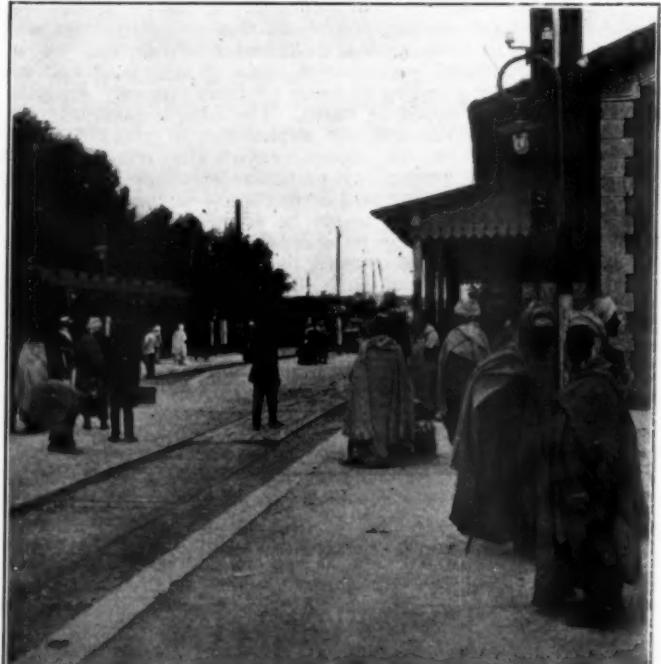
The figure allowed for working capital I think is inadequate. \$700,000 is less than the aggregate of cash and material and supplies on hand during any one year. The average for the years 1912 to 1916, inclusive, is \$1,063,025. There is warrant for accepting this figure. To use any other figure seems arbitrary.

It appears obvious that the figure of final value has been made less than it otherwise would be by the deduction of \$4,945,496, being the amount by which the property is said to have depreciated. The amount would be required to reproduce the property, and should be considered as in the original investment. The property has been well maintained and as a going entity has not depreciated. It is not conceivable that a sane person would ever build a railway if he knew that a substantial part of his investment would be considered lost through depreciation and that he would not be permitted to have a return upon it. The law has no such unconscionable purpose. The report praises the carrier as essential and efficient. To deduct depreciation where such depreciation has not been taken care of out of income from the value which other figures suggest, is arbitrarily, inequitable, and illegal confiscation of property.

The report discloses another error which is fundamental. It does not do what the statute tells us to do. The valuation date was June 30, 1916, more than seven years ago. Evidence as to subsequent conditions would throw light as to the value on valuation date, but it is disregarded. How values demonstrated later shall be determined is not shown. The whole basis for arriving at values throughout the world has changed since 1916. A valuation as of 1916 could not in the nature of the case be sufficient, fair, or legal for the purposes for which we are valuing the railway. It can not be a valid and final valuation and be entitled to the presumptions and effects of a final valuation and can not have efficacy in law. We should withhold a so-called final valuation until we can bring it down to date.

The report in this case also discloses the error made in prior cases of not determining value which, when determined, must be used for rate-making purposes because it is value, but arbitrarily states a figure which without warrant of law we set up as the figure to be used as a basis for rate making.

We have great responsibility in this valuation work. It is a task that is designed to be upbuilding, to promote fairness, and create that confidence which is essential to the solution of the so-called railroad problem, and provide efficient transportation. A policy which threatens loss through confiscation and disturbs the confidence of security holders in the agencies of government when dealing with their property menaces the public interest and violates the law.



Ewing Galloway

A Station in Algeria

The Railroad Passenger Car Up-to-Date*

Suggestions Are Made as to How Economies May Be
Obtained Through Standardization

By C. E. Barba

TO SECURE A satisfactory basis upon which to formulate the present theories relative to the design of passenger equipment, the problem is in knowing what are the demands of the service for which the vehicle is intended and then securing a just appreciation of the resistance and destructive forces which must be overcome to satisfactorily perform its desired function. This problem is complicated by sharp limitations, such as lightness, economy and reliability.

From a weight of 375 lb. per passenger in 1836, the dead load has increased to 1,800 lb. per passenger for coaches and from 4,000 lb. to 5,000 lb. for some of the modern Pullman equipment. Undoubtedly, the practices in past years of the Pullman Company, whose cars were much heavier than any other class of equipment, had a tendency towards increasing the weights for all classes of passenger service in order to secure a closer approximation toward uniform train strength.

In economy is included the initial cost, the cost of maintenance and the cost of transportation. If maintenance and depreciation costs are kept to a low figure, the long life of steel cars will be economical even with a slightly increased initial cost. Transportation costs deal with the proper design of trucks and side bearings to give the least haulage resistance, the proper design of coupler and coupler clearances and, in general, the rideability of the car, which directly influences travel.

Likewise, excessive weight affects the cost of haulage unless the total load is within the limits of the capabilities of the prime mover. This seems to be true so long as we neglect the factor of speed. Rapid acceleration and retardation, however, demand the lowest weight consistent with comfort and safety.

To obtain reliability, safety and strength with economy are the ends sought. These features are usually obtained by the introduction of load-carrying side members, supported by an underframe capable of sustaining end shocks, a roof construction that will sustain the weight of the car body and an end construction which will resist telescopic action. There are, therefore, a number of ideals to be considered in up-to-date equipment.

A unit section between side posts should be adopted comprising two or three windows to enable the designer to obtain cars of various standard lengths by the addition or elimination of these units.

Importance of Underframe Construction

The underframe is the great vital feature of passenger equipment. Upon it depends the success or failure of the design more than any of the other members. The present designs of underframes may be divided into two classes of load transference: First, those distinguished by the absence of all bolsters, in which the static lading is all transferred at various intermediate points to the center sills, which in turn places it directly upon the center plates which are riveted to them. This type presupposes a strong center sill and may make use of a weaker side girder. The second class is those in which all the sills carry the load to a bolster. This type is characteristic of a majority of the equipment now in service.

The first type lends itself particularly to those cars which have side doors, such as the postal and baggage types. A support may be placed directly under the aperture for load transference to the center sills and the side will not need to be strengthened by a frame construction carrying the load up to the eaves and over the door.

The underframe member should be standardized by designing for the maximum length of car and, when reducing the length for shorter cars, a central unit may be removed and, when advisable, the thickness of the cover plates reduced.

The riveting can be anything that is consistent with good design, but in the central unit section it must be a constant function of the distance between posts so that the removal of such a unit will not alter the spacing. The underframe should be built with a view to clearances required for both steam and electric service and hence designed to take either motor or trailer truck.

Likewise, the standardization and location of equipment hangers, battery boxes, steam and air piping, brake rigging and false floor construction require most careful consideration, as the variety of installations, the initial cost of application and subsequent maintenance are out of all proportion for the services intended.

Standard End and Roof Construction

The adoption of a standard end, including the platform and vestibules, should be given consideration. The anti-telescopic features should be simplified and increased by transferring more of the load to the side members.

The form of roof construction best adapted for strength, lightness and ease of repairs is one of a semi-circular construction. U-shaped carlines are preferable, with steel sheets rolled to conform thereto. All joints should be covered with splice plates.

To facilitate a more rigid end construction, it is suggested that the present form of hood construction be eliminated and the semi-circular roof continued to the end of the vestibules. This would enable the application of a semi-circular, channel shaped pressing to be applied to the end of the roof and attached to the vestibule, which undoubtedly would decrease the wind resistance.

The elimination of the so-called "clear-story," or upper deck, is recommended as it is no longer required for the purposes for which it was originally intended. Its primary purpose was for the suspension of oil lamps and its secondary purpose for ventilation. This form of construction is expensive, considering sash frames, sash, screens, deck plate, carlines and inside mouldings. The elimination of all of these items, with the exception of a modification of the carline to conform to a semi-circular roof, decreases the weight, increases the strength of the roof as a whole, and assists in maintenance.

Change the Location of the Belt Rail

The present location of the belt rail where it is on the outside of the side sheets below the window sill should be eliminated by applying the rail in pressed recesses in the side posts, the depth of the recess being equivalent to the thickness of the belt rail.

Such an arrangement would permit the procurement of level side sheets to cover one panel only, or from the center

*A brief abstract of a paper presented at a meeting of the New England Railway Club, Boston, Mass., April 8, 1924.

line of one post to another with reasonable clearance between. The splice plate to cover would consist of both the post cover between the window openings and the joint of the side sheets, extending from the letter board to the bottom of the side sill. This feature has a two-fold purpose; namely, to do away with buckles in the side sheets covering two or more panels, and to facilitate repairs when the car has been wrecked or side swiped.

The window openings in the side frame may vary for construction purposes from $\frac{1}{4}$ in. to $\frac{3}{8}$ in. both in length and width, as the use of either an aluminum or pressed steel window frame, having suitable flanges and applied from the outside, will take care of these variations. This form of construction would require a stationary sash, thus eliminating all hardware and furring strips. The latter is quite awkward to apply on account of the location.

Proper System of Ventilation and Seating

A ventilating system to take care of the conditions previously outlined should be provided, as undoubtedly more attention has been given in the past to the development of heating passenger coaches than to ventilation. These subjects are closely interwoven and they should be considered together instead of separately.

In this connection, it might be well to mention for those directly interested in the subject of ventilation and heating of railway passenger cars that an exhaustive study on this subject was presented by K. F. Nystrom, engineer of design, Chicago, Milwaukee & St. Paul, before the Canadian Railway Club of Montreal, Canada, on February 12, 1924.[†]

The reversible seats now in common use should also be eliminated, thereby simplifying not only the construction, but likewise their application, substituting instead seats placed back-to-back. This would permit the application of a steel gusset between the seat backs and attaching them to the side post and floor support of the underframe. This form of construction would increase the transverse stiffness of the side framing and prevent in a large measure the buckling of the side members due to collision.

All interior finish should be made up of veneer, the core of which should be fireproof. The present practice of having a steel inside finish involves considerable labor for its application and necessitates lining for seasonable climates and adds nothing to the strength of the car body as a whole.

Why the All-Steel Car?

Theories have been advanced that the ethics of the service demand an all-steel car. Why? In tunnel service the danger from fires is greater than from collision and the necessity for non-collapsible fireproof cars for such service is evident. On the other hand, the necessity for cars of this type is just as important for our long distance, high speed service, where luxurious buffet, dining, parlor and sleeping cars have provided comforts at the expense of increased weight. To meet the requirements of these fast schedules with heavy trains, the modern passenger locomotive of large tractive force has been developed. Considerations of safety demand that the passenger equipment of such a train be of uniform strength, capable of resisting the greater shocks in service and accident due to the greatly increased kinetic energy of the moving unit.

The past twenty-one years have demonstrated that all-steel cars may be modified to the extent of using wood in some form for the inside finish, without destroying the advantage a steel coach offers as a measure of safety.

The design of the saloon and lavatories should be simplified to be built either single or in combination with switch lockers and water coolers. The cost of manufacture of enclosures of this character, when they are made of steel and adhere to the

finish required as part of the interior arrangement, is not consistent with productive methods now in vogue.

Standard Type Battery Boxes and Flooring

The size and type of battery boxes could be standardized, provided the size of batteries, irrespective of the system used, were alike. It is also considered good practice to have one size of battery box for all passenger cars, the size to be determined by the maximum number of batteries to be used on any one car.

Since the usual type of flooring consists of some plastic medium laid on corrugated, keystone or other forms of metal sheets, its life depends largely on the mixture. Wear in the aisle is inevitable and it is proposed to lay the width of the aisle separate from the rest of the floor by placing narrow strips of asphaltum between the aisle proper and the main floor. Such an arrangement will facilitate the re-laying and take care of expansion and contraction in a transverse direction.

Importance of Proper Design

The success of any equipment depends on the design, but unfortunately the lack of time usually available between starting the design and the placing of an order has seriously hampered some designers. The resulting trouble in the shop owing to oversight in design, has given the subject a black eye on some roads.

It is unfortunate that the managements do not usually foresee the difficulties involved in such a problem, and allow at least a year to the designers to evolve a design which will not only be satisfactory for the initial order, but from which future orders of cars of different lengths and character can be constructed more expeditiously. The research work necessary to determine the possibilities of an all-steel equipment, for ease of manufacture and maintenance is enormous, but undoubtedly the labor thus spent is well repaid by the decreased cost of maintenance and interchangeability, so that after the first development any type of car can be designed at short notice with a larger degree of accuracy than has ever before been attempted.

The ideal car will never be built, but the lighter car of simple and easy, though sturdy construction that will carry the greatest number of passengers most comfortably on the least number of journals and always be ready to serve, is the type of car desired.

* * * *



Wide World
Demonstrating an Automatic Coupler for Cars and Air Lines in England

[†]An abstract of Mr. Nystrom's paper was published in the February 16, 1924, number of the *Railway Age*.

Transportation Division Meets at Atlantic City

Regularity of Traffic Helped 1923 Performance—Is There Danger of Traffic Jam in Fall of 1924?

ABOUT 175 transportation officers attended the annual session of the Transportation Division of the American Railway Association held at the Hotel Traymore, Atlantic City on April 30. The session lasted but a single day. J. J. Bernet, president of New York, Chicago & St. Louis and chairman of the division, presided. Addresses were made by E. J. Pearson, president of the New York, New Haven & Hartford; by W. P. Bartel of the I. C. C. Bureau of Service; by Donald D. Conn, W. C. Kendall, and L. M. Betts of the A. R. A. Car Service Division. W. J. McGarry, also of the Car Service Division was expected to speak on the coal car situation but was unable to attend because of illness.

The principal subjects discussed at the meeting were the car service and per diem rules and the transportation activity which they govern. The several speakers referred to the marked success the railways had had in meeting the transportation demands of 1923, and the influence in bringing about that result exerted by the Car Service Division through its general activity, its institution of the regional advisory boards, etc. The point was made that the operating results of 1923 were assisted measurably by an evenness of the traffic volume throughout the year. Traffic, at the present time, was shown to be falling off. The question was offered as to whether this presaged a possible jam or peak in the fall of 1924.

E. J. Pearson Makes "Keynote" Speech

President Pearson of the New Haven is the member of the executive committee of the American Railway Association to whom is assigned supervision over the work of the Transportation Division. Mr. Pearson's remarks were much in the line of a "keynote" speech. He reviewed the work of the division since its organization in its present form five years ago. Somewhat jokingly he said that the division had performed its work so well during this period that his "supervisory" duties had been light. He was the first of the several speakers to refer to the railway accomplishments of 1923, to point out wherein they were assisted by the regularity of traffic, as well as by the work of the Car Service Division and that of the railways themselves, and to offer the question noted in the preceding paragraph. He spoke of the importance of proper rules to govern car movement and the compilation of the records relating thereto saying, with reference to the latter, that the keeping of car records required the inscribing of possibly 100,000,000 characters in a single day. The magnitude of the work emphasized the importance of proper rules because a change in them might readily mean the elimination or addition of a great amount of figure work.

Mr. Pearson made several suggestions as to possible future activity of the Transportation Division. He said, in this connection, that much remains to be done by way of inducing shippers to ship early, the desired result being a minimizing of the fall traffic peak. There is still a big problem, he said, with reference to empty mileage of cars. He suggested that there was a tendency to let cars go that might better often be held for loads and said that the situation needs study. Cars, he emphasized, represented a heavy investment; a saving of 1,000 cars would mean the saving of an investment of approximately \$2,000,000. There is a peculiar problem offered to the railroads in that they must hold a tremendous investment in cars and other facilities to meet peaks of traffic lasting but a few months at a time, the invest-

ment being idle at other times. Possible remedy might be found in an adoption of a new basis to apply in periods of maximum demand such as shorter free time or a seasonal change in the demurrage rates. The shipper, he said, asks the railroads to speed up in peak periods: possibly he should be asked to speed up himself. Mr. Pearson concluded with a plea for whole-hearted co-operation by the railroads towards the Car Service Division and with a tribute to the good work which has been done by the latter organization.

Car Service Division Statistics Questioned

W. P. Bartel of the Bureau of Service of the Interstate Commerce Commission pointed out in the course of his remarks that the Interstate Commerce Commission had a new interest in the activity of the Transportation Division because of its new responsibilities embodied in Section 15-a of the Interstate Commerce Act with reference to economy and efficiency of railway operation. He amplified suggestions made previously with reference to the desirability of pre-classification of cars which, he said, offered opportunity for saving much unnecessary switching in classification yards.

He followed with some references to the statistics compiled by the Car Service Division which are reported by the latter to the Interstate Commerce Commission. Lack of uniformity, he said, had been found with reference to some of the figures. He offered details concerning the incorrect manner in which one railroad, the name of which he did not mention, was reporting its figures of cars on hand to be moved, cars moved, and the ratio of the one to the other. He criticized rather strongly the varying methods of reporting repairs to cars and locomotives, pointing out that one road had reported figures which showed that all its locomotives had received repairs no less than three times in a single two-weeks period. The figures, he said, must be uniform. If the carriers find it impossible, he added, to report uniform figures to the Car Service Division, it may prove necessary for the Interstate Commerce Commission, itself, to lay down more definite rules of compilation and to require the carriers to report the figures to the commission direct instead of through the Car Service Division as at present. In similar vein he referred to the necessity for 100-per-cent adherence to the car service rules which, if not forthcoming, might require the work to be taken over by the commission itself. He added, however, that recently there had been notable improvement in this respect on the part of the carriers.

Mr. Bartel's suggestions for pre-classification brought forth a bit of discussion. Mr. Bernet, the presiding officer, emphasized that the problem was not of simple solution. Study of the activity of a single yard was insufficient, he said. The car must be followed back to its origin.

Donald D. Conn, manager of the public relations section of the A. R. A. Car Service Division and the man who has probably done most to bring to success the work of the Regional Advisory Boards, gave a topical review of railway trends. He emphasized the necessity of securing the co-operation of the public and shipper. He expressed the view that the railways might expect to have to handle a peak traffic in the fall of 1924. His remarks were illustrated by a number of interesting charts which the *Railway Age* plans to reproduce with amplification of Mr. Conn's remarks in its next issue.

W. C. Kendall, manager of the railroads relation's section

of the Car Service Division spoke on the observance of the car service rules. In 1923, he said, there had been the most concerted effort yet made over an extended period of time to secure such observance, which efforts had been favored with considerable success. He referred to efforts made along similar lines in 1917, which had not met with entire success. The means of securing observance lie in the education of the railway people and shippers. Much assistance has been gained from the activity of the district managers. These representatives of the Car Service Division have helped by offering opportunity for decentralization which has brought the car service work in closer relation with the individual railways and put it in closer touch with local conditions.

In 1923, Mr. Kendall said, the unusual happened in the form of a return of cars to owning roads in a period of heavy traffic. He referred to the question of violations of car service rules. He said that whereas in July, 1923, there were 285,000 such violations reported in the manner provided for the purpose, in March, 1924, there had been only 200,000 such violations. A large share of all the violations are those of Rule 2. Mr. Kendall concluded his remarks with a suggestion that the railroads should essay to keep their embargoes at a minimum. He referred particularly to embargoes that can be put in the form of tariffs, such as those relating to abandoned service, etc. In such instances tariffs should be issued as soon as possible because embargoes, as such, are frequently subject to question or criticism.

Box Car Distribution

L. M. Betts manager of the closed car section of the Car Service Division spoke on the subject of box car distribution. He began his remarks by reference to the present favorable condition in this respect as compared to the situation as it existed a year ago. On April 15, 1924, he said the western roads had on their lines, box cars equivalent to 90.4 per cent of their ownership of such cars, the Northwestern region having 89.2 per cent, the Central western 89.5 per cent and the Southwestern 95.9 per cent. The improvement in the situation is also shown in the figures of home cars on home roads. On April 15 the roads in the Western district had 57.6 per cent of their box cars on home roads, an increase of 100,204 cars or 63.2 per cent over a year ago. Box cars on home roads in the Northwestern region on April 15 were 57.8 per cent, an increase of 52 per cent over the number for a year ago. In the Central western region the percentage was 59, the increase 77 per cent, and in the Southwestern region the percentage was 53.8, an increase of 57 per cent.

Mr. Betts pointed out the necessity of continuing the present favorable status. Crop conditions are unusually favorable for this season, he said although the government estimates are to the effect that the wheat crop will be about the same as last year. The improvement effected last year in box car location was brought about, Mr. Betts said, by special orders issued to expedite the return of the cars to western territory. These special orders may be classified under two heads; (1) those intended to build up supply in the west by restricting the uses which roads holding the cars in the east might normally be allowed by the Car Service rules, and (2) those intended to restrict the home routing of cars already in the west. The first class was the most important in last year's situation whereas to hold the present situation the second may have to be resorted to more this year. The real difficulty, Mr. Betts said, was the routing of system cars off-line, not an actual but a potential violation of the car service rules. The Car Service Division had hoped not to have to resort to special orders in this year's situation but the situation is so framing itself that special action may be necessary.

Mr. Betts concluded his remarks by some interesting comments concerning the Regional Advisory Boards. These, he said, had not proved to be complaint bureaus, as various transportation officers had feared they might be. Rather they

have been the opposite because the shippers have frequently expressed their pleasure concerning good railway service. However, even this was not their purpose, Mr. Betts continued. They are intended to be constructive organizations to study the transportation situation with a view to securing service, economy and improved results generally. The railways should co-operate with them. It is particularly desired that the carriers be well represented and that they should offer suggestions for the work to be undertaken.

Committee reports presented at the annual session of the Transportation Division were received without lengthy discussion, the purpose of the meeting in this respect being rather to ratify the work done during the past year by the committees.

Report of General Committee

The report of the general committee, G. W. Crawford, chairman, said that since its last report the committee had approved the application of 46 roads for admission to the car service and per diem agreement, rejected the application of one road and recommended the suspension of 9. The committee announced its decision that hereafter when a road is suspended from the agreement, the general secretary shall notify the direct connections of such a road by wire and within not less than five days thereafter issue notice to all member roads, to take effect on the date of such notice.

The committee has supervised joint checks of the records of each road performing switching service at the following points, as results of which, the reclaim allowed under Per Diem Rule 5 on each line has been fixed in accordance with the figures determined by such checks:—Barberton, Ohio; Evansville, Ind.; Louisville, Ky.; Springfield, Ohio, and Vincennes, Ind. Checks are now being made at Atlanta, Ga., and Birmingham, Ala.

The Interstate Commerce Commission, has held that the per diem and reclaim arrangement is not a proper basis for settlement by an industrial, common carrier, switching road for the use or detention on its line of foreign cars, and prescribed, in lieu thereof, a modified demurrage plan of settlement which is commonly known as the "Birmingham Southern Rules." The rules prescribed by the commission are tentative and not intended for general application until trial has been had. Study is now being made of the rules and a committee appointed to handle the matter further.

The general committee has conducted an active campaign to secure a better enforcement of Per Diem Rule 6 in the settlement for car hire with non-subscribers. Practice is generally uniform throughout but allowances contrary to Per Diem Rule 6 create a discrimination as between non-subscriber roads and are liable to result in an effort of all non-subscribers to obtain as favorable arrangements, all of which has a tendency to break down the entire per diem structure.

In accordance with the action taken at the last session, changes recommended in Car Service Rule 14 were submitted to the membership for a vote by letter ballot and made effective August 1, 1923. There was also adopted by letter ballot vote changes in Per Diem Rules 13, 14 and 16, and Car Service Rule 12.

To give effect to the resolution adopted by the division, April 25, 1923, relative to the handling of embargoes, and in view of the numerous complaints made to the Interstate Commerce Commission, and to the Car Service Division, as to the handling of embargoes in the past, a joint committee consisting of representatives of the Car Service, Transportation, and Traffic Divisions, together with counsel, has been appointed to agree, if possible, on some general plan of embargo policy for the future, which will eliminate the possibility of discrimination in handling traffic against embargoes.

The committee has recommended that the board of directors authorize the Car Service Division to investigate the application of the rules governing the equalization of loaded and

empty mileage made by privately owned tank cars, as adopted by the association and published in the tariffs for the account of all railroads. The reason for this recommendation is because some railroads do not appear to have a complete understanding of the tariff and this misunderstanding is preventing the presentation and collection of bills for certain roads, which has a tendency to create demands upon other roads for similar action and if not corrected, will result in breaking down the rules entirely.

Other Committee Reports

The committee on records, J. D. Altmas, assistant general superintendent car service, Canadian Pacific, chairman, reported on a number of matters previously covered by letter ballot and circulars covering changes in the per diem rules.

The committee on car service, J. E. Roberts, superintendent transportation Delaware & Hudson, chairman, similarly reported on various matters previously covered in circulars issued by the division. One of the changes in rules so announced was in Car Service Rule 12, which has been revised to strengthen the prohibition of advertisements on freight or passenger cars or locomotives. The report reviewed the purpose of Car Service Rules 1 to 5 and Per Diem Rule 19 as adopted and made effective March 1, 1920, and revised—the changes being intended to secure greater uniformity of observance—effective July 1, 1921.

By the application of these rules, the committee's report said in connection with constant supervision by the Car Service Division; action by that Division under Per Diem Rule 19 when necessary to meet emergency situations, and a better understanding on the part of all concerned, which includes railroads, Car Service Division, and the public, cars have been maintained on the home lines, on the basis of a reasonable percentage of ownership and the largest volume of traffic in the history of railroad operations in the United States handled during 1923.

This record would indicate that the rules are adapted to the general requirements. However, suggestions have been made from time to time, each of which has been considered by the committee, its conclusion having been, that changes conforming to the suggestions were not advisable when considered from the standpoint of the best interests of the carriers as a whole.

With a view to determining if in actual practice railroads had developed any fundamental weaknesses in the rules, all railroads were given an opportunity by President Aishton, of the American Railway Association, to submit suggestions, criticisms or recommendations, for consideration by the committee. There were received in response to this invitation a considerable number of suggestions as to necessary or desirable changes in the rules.

The result of a careful analysis of these suggestions by the committee is, the report said, that some involved a fundamental principle, the others related mainly to local conditions. Accordingly, the committee concluded that the suggested changes, other than those involving fundamental principles, did not contemplate any practices under rules in present form, which cannot be provided for, through either local arrangements by interested railroads or action of the Car Service Division.

The committee referred particularly to discussion of Car Service Rule 2(e); 3(d); 4 and 5. It recommended that there be no change in the last and said that further investigation would be made with reference to the first three. Analysis of the 5-cent mileage rate for empty cars in Rule 4 is being undertaken by the Car Service Division and the Bureau of Railway Economics, it being the belief that this rate is not sufficient to cover the expense of handling the cars.

The Committee offered the following interpretations of Car Service Rules 2, 3 and 4 which were adopted:

Question: Under Rule 2 can a car, empty at junction with home road, be loaded via the home road via any junction point?"

"Answer: Yes."

Question: Under Rule 2(f) can a car be loaded to any junction with the home road or to a point intermediate with the home road?"

"Answer: Yes."

Question: Does the word 'moved' as used in Rules 2 and 3 mean 'loaded or empty'?"

"Answer: Both. 'Loaded or empty'."

Question: Does Rule 4 contemplate that a road performing short-haul service at the established per mile rate shall assume per diem while such cars are in its possession?"

"Answer: Yes."

The Committee on Railroad Business Mail, H. L. Fairfield, manager, baggage and mail traffic, Illinois Central, chairman, offered suggestions looking to more careful addressing and mailing of such matter. It emphasized in this connection that "if a letter is worth writing, it is worth addressing well." Many officers, agents and others, the report said, spend many hours, even days, in preparing long reports and then address, or permit them to be addressed, in a manner which jeopardizes their delivery.

Committee on Demurrage, Storage,

Reconsignment and Diversion

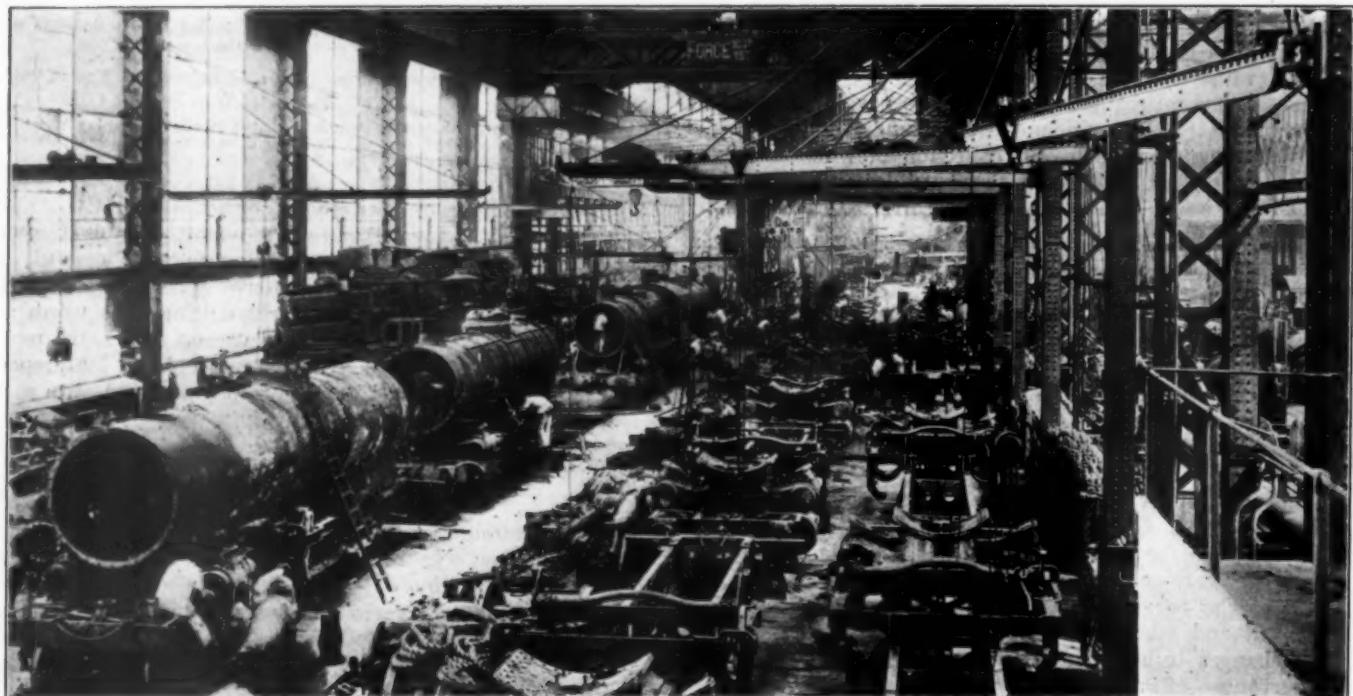
The Committee on Demurrage, Storage, Reconsignment and Diversion, J. F. Porterfield, general superintendent transportation, Illinois Central, chairman, offered a progress report dealing with various matters still pending and presented suggestions as to observance of the rules covering demurrage. The report emphasized the necessity of proper mailing of arrival notices on both car load and l.c.l. freight. The committee said that it did not desire to recommend any further changes in the National Car Demurrage Rules or the Uniform Code of Storage Rules. The committee is, however, giving consideration to the excessive delays to refrigerator cars, especially during times of acute demand for this class of equipment and will undertake to reach an agreement with the shippers upon an increase in the demurrage rates, which will force a more prompt release of refrigerator cars.

The report of the Committee on Freight Handling Service, F. W. B. Humes, superintendent stations and transfers, Eastern region, Pennsylvania System, chairman, presented as an exhibit or appendix to its report a revised and more comprehensive code of l.c.l. rules, covering receipt, stowing, handling and delivery of such freight and as an exhibit also a code of rules relating to the inspection and preparation of cars to be loaded with sacked commodities and to the proper methods of stowing flour and other grain products in sacks. It referred to circulars previously issued by the division relating to a "uniform method of handling over and astray freight and matching against shorts at destination points" and to the loading of oil fertilizer, hides, tar and creosote. It offered a change in the rules relating to the shipment of potatoes in barrels.

The committee called attention to the good results obtained by taking up with the shippers direct, cases where loss and damages have been caused by improper packing, stowing, etc., and soliciting their co-operation. It suggested the desirability of destination inspection of carload shipments of fruits and vegetables and requested suggestions from the railroads looking to the improvement in the methods of packing, stowing, blocking, bracing, etc., of this and other kinds of freight.

The officers for the past year were J. J. Bernet, chairman; W. A. Worthington, vice-president and assistant to chairman of the Southern Pacific, vice-chairman, and G. W. Covert, secretary.

Members of the general committee with terms to expire April, 1927, were elected by letter ballot, the result of which was announced at the session, as follows: New England territory—B. R. Pollock, vice-president and general manager, Boston & Maine; Eastern territory—J. J. Bernet, president, New York, Chicago & St. Louis; Western territory—C. O. Jenks, vice-president, Great Northern, and Canadian territory—D. Crombie, chief of transportation, Canadian National.



American Locomotives Under Repair in the Penhöet Shipyard, St. Nazaire, France

French Shipyard Repairs American Locomotives

Engines Formerly Used by United States Army Are Being
Equipped with Copper Fireboxes

By Captain G. L. Carden

THE PENHÖET SHIPYARDS at St. Nazaire and Nantes, France, have received orders from the French State Railway to repair and make thoroughly serviceable several hundred American locomotives which were received



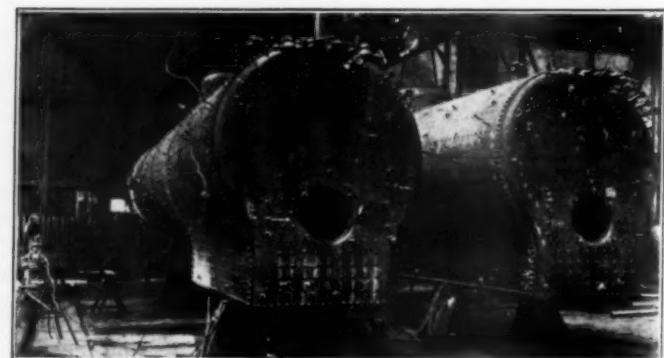
Locomotives Used by the American Army in France Awaiting
Repairs

in France during the war, and subsequently became the property of the French State.

The work on this order has already begun and involves the substitution of copper fireboxes for the steel boxes with which these locomotives were originally equipped. The entire order requires Class 2 repairs of each engine, which includes turning or renewing the tires and making the necessary repairs to the machinery. The approximate cost to the French State is 112,000 francs per locomotive, or

\$6,650 at 17 francs to the dollar. It is estimated that these locomotives will be good for 15 years of service.

The yards working on these orders are the Chautiers et Ateliers de St. Nazaire (Penhöet) and the Chautiers Navales de la Loire. The Loire shops also have a contract with the French State for the repair of 1,000 locomotives, which covers a period of 10 years. According to the terms



Copper Fireboxes Are Being Substituted for Steel on These
Locomotives

of both contracts, the French State is to supply the materials and the yards are to do the work.

The port of St. Nazaire was one of the principal discharging points for American locomotives and served as a terminal base for the Railway Transportation Corps of the

American Army. The Loire shops at St. Nazaire assembled 675 American locomotives during the war.

Determining the Cost

In estimating the total cost to be 112,000 francs per locomotive, the Loire works states that this figure is based on a maximum cost of 32,000 francs for the copper and other materials and on an allowance of 80,000 francs to the shop to cover shop expenses and profit. The cost of material varies according to the amount of repair work required on each locomotive, and also as the price of copper fluctuates.

The repair men in the St. Nazaire and Loire shops are receiving between 2 francs 50 centimes and 3 francs 50 centimes an hour. At the present time eight hours constitute a day's work, but provision is now being made for a 60-hour a week schedule.

The policy of repairing American locomotives precludes any new building program for the French State Railways some time to come. On the other hand, the Loire shops have an order for 11 Mikado type locomotives for the Paris-Lyons-Mediterranean, having a total weight of 80,000 kilograms. It is understood that the approximate price for this new construction at the Loire works will be from 5 francs to 5 francs 50 centimes per kilogram, or from \$21,500 to \$25,800 per locomotive.

Trouble with the Steel Fireboxes

Locomotive service on the French railroads is not as continuous as in America and as a result fires are drawn more frequently. On account of the frequent changes in temperature, the firebox is subject to severe strains and as a result its life is considerably shortened. At first the Penhöet shops undertook to substitute new steel fireboxes, but the officers of the French State Railways decided in favor of the copper. While the first cost of the copper material is

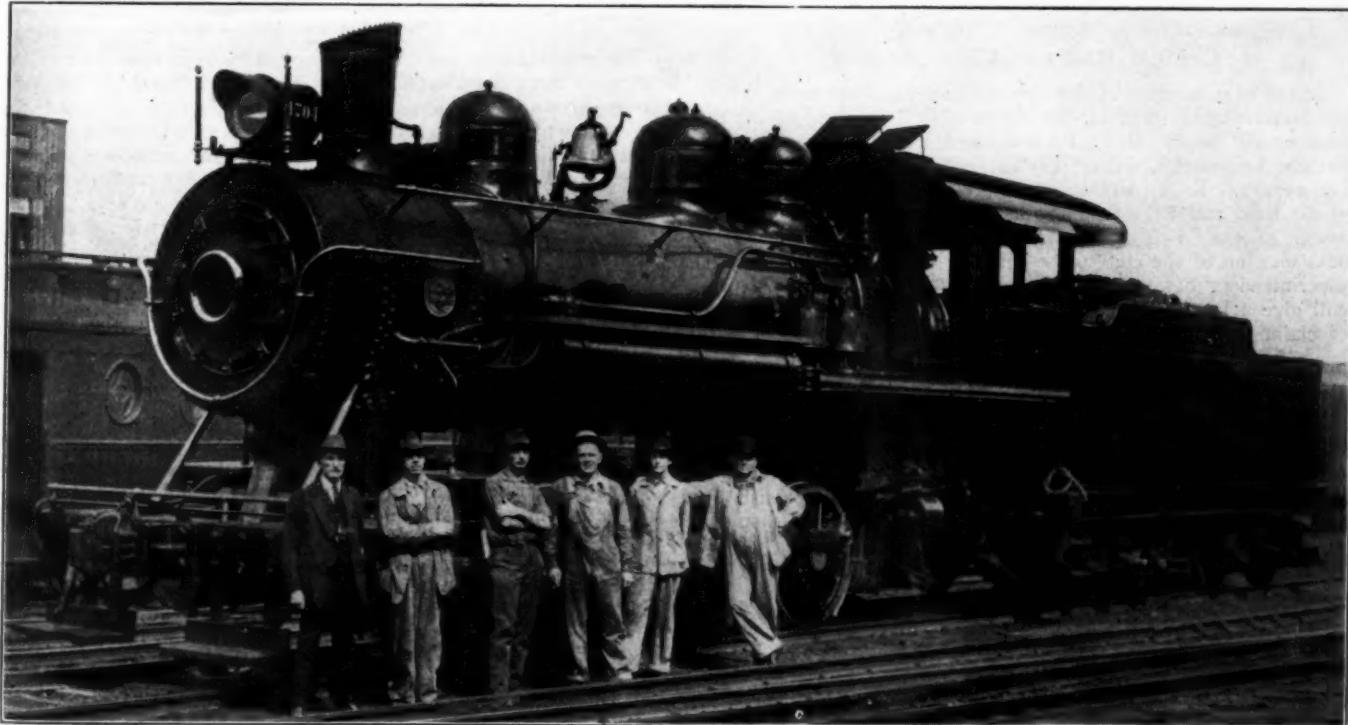
greater, it is estimated that the life of the locomotive will be one-half more than if steel were used. The French endeavor to keep a locomotive in service longer than is the customary practice in America.

Upon being shopped, a locomotive is stripped and the work of boring the cylinders and lining up is begun immediately. The heads of both the Loire and Penhöet locomotive departments stated that the frames were not square on the majority of the locomotives, and the boilers were not properly seated in the saddles, and that by sending the engine out of the shop in true alignment, the rolling effect so characteristic of the American engines was practically eliminated. One is impressed with the care and accuracy that is bestowed in lining up and squaring all parts of the engine. As the result of such painstaking work, the repaired engine runs with a noiselessness which is characteristic only of a good mechanical job. Five coats of paint, including a priming coat, completes the locomotive.

It is evident that the European shipyards are following the same policy of a large number of shipyards in America. Three months ago the Penhöet and Loire yards had little to do, but on account of going into locomotive repair work, both yards are now short of men. The Penhöet plant is now employing 4,200 men and needs 500 more.

The American locomotives as repaired by the French, will run under the same steam pressures as originally designed. The French engineers say that they expect no serious trouble for eight years, and that the first weakness will probably be in the throat sheet. They lay stress on the fact that when a locomotive is finally taken out of service, the copper in the fireboxes will have considerable value as scrap.

The locomotive departments of both the Penhöet and Loire shops are well supplied with tools, but for the most part they have seen considerable service and need replacing.



Special Attention Is Being Given by the Southern Railway to the Appearance of the Switching Locomotives Which Handle Trains at Important Passenger Terminals. The Locomotives Used in This Service at Several Large Points on the Southern Have Recently Been Redressed and their Appearance Has Been Made as Attractive as Possible. In Painting These Locomotives the Standards for Passenger Service Were Followed Instead of Those for Freight, Which Are Usually Followed in Switching Service. Engine No. 1704, Shown in the Illustration, Is Used at the Atlanta Terminal Station.

General News Department

The New England Railroad Club will hold its annual banquet at the Copley-Plaza Hotel, Boston, at 6:30 p. m., on May 13.

With little discussion two private railway bills affecting properties in the United States were this week reported by the select committee on railways, canals and telegraph lines. These bills, sponsored by Sir Henry Drayton, former Minister of Finance, affect the Canada Southern division of the Michigan Central, and the other the Detroit river tunnel, through which this line operates. "Our friends in the United States," explained Sir Henry to the Committee, "want to soon put into operation a system of regional railways and it is necessary for this Parliament to implement the powers of the Canada Southern Railway so that, if the New York Central Lines choose they may transfer that line to some other road or system arising out of the regional scheme. It is merely an enabling bill, the right to go ahead and do something if necessary. Whatever road is eventually in control it will, just as the present road is, be subject to the control of the Dominion Board of Railway Commissioners." The same was the case in regard to the Detroit River Tunnel Company.

Correction

The footnote at the bottom of table B in the article entitled "How a Road Can Forecast Its Tie Requirements," which appeared on page 993 of the *Railway Age* of April 19 should have read "Annual average projected renewal subsequent to nineteen forty-four, when renewals are uniform per year with an average life of treated ties of sixteen years, will equal 1,600,000 or 158 per mile." This statement was incorrectly published in that issue to read "subsequent to 1914, when renewals are uniform per week."

Central Railroad Club Meeting

At the next meeting of the Central Railroad Club to be held at the Hotel Statler, Buffalo, N. Y., on May 8 the subject for discussion will be the Daily Program and Performance of a Slow Freight Locomotive, a Fast Freight Locomotive and a Switching Locomotive. R. S. Parsons, vice-president of the Ohio region of the Erie, and J. F. Jennings, assistant superintendent of motive power of the Michigan Central, will be the speakers. At the next meeting of the club, to be held on June 12, C. G. Richmond, superintendent of stations and transfers of the Illinois Central, will give a lecture illustrated with motion pictures on the subject of claim prevention.

Group Life Insurance

From the Missouri State Life Insurance Company, and from other sources, we learn that group life insurance is in effect, for certain classes of officers or employees, on eight railroads not mentioned in the article on this subject which was published in the *Railway Age* of April 5; and these eight names should be added to the list then printed:

Copper Range
Gulf Coast Lines
Houston Belt & Terminal
Missouri-Kansas-Texas
Mobile & Ohio
Oneida & Western
Southern
Warren & Saline River

Toronto to Sue Railways for Failure to Build Viaduct

Damages of \$10,000,000 from the Canadian Pacific and the Canadian National for failure to construct the viaduct from the eastern entrance of the city of Toronto to the new union station are sought by the Harbor Commission of that city in a claim of damages filed by counsel for the commission, which asks for specific performance of the viaduct agreement

of 1913 and damages of \$5,000,000 for delay, or, alternately, specific performance of the provisions of the agreement regarding the acquisition of lands south of the present C. P. R. right of way along the waterfront, and damages of \$10,000,000 for failure to build the viaduct. The Harbor Commission seeks also to have the enforcement order of the Dominion Board of Railway Commissioners made an order of the court. One of the features of the legal action lies in the fact that many of the leases of properties to be acquired under the viaduct agreement fall due shortly and the Harbor Board is seeking to have the properties acquired now, instead of having the leases renewed.

R. R. Y. M. C. A. Meeting in Toronto

Radio as a means of giving news, instruction and pleasure to thousands of railway workers in Canada was adopted last week at a conference in Toronto of railway and railway Y. M. C. A. officials and secretaries. The event brought together officials from Portland, Me., Chicago, Sarnia, Island Pond, Vt., Sioux Lookout, Niagara Falls and Montreal. W. H. Swift, Jr., radio engineer of the Canadian National Railways, addressed a luncheon, and after the luncheon addresses were delivered by: R. H. Fish and R. W. Devenish, superintendents of divisions of the C. N. R. in Ontario; J. M. Dudley; L. L. Grabill, general baggage agent, Ontario division; H. Slack, Secretary of the Grand Trunk Y. M. C. A. in Chicago; and W. J. Lind, president of the Metropolitan Board of the Y. M. C. A. in Toronto.

Committees Appointed in Chicago

Passenger Terminal Program

Three committees have been appointed by representatives of the railroads using the Dearborn, the Grand Central and the La Salle street passenger terminals in Chicago to develop plans for the construction of a union terminal to accommodate the railways now using the three stations. A committee of the presidents of railways involved consists of J. E. Gorman, Rock Island, chairman; W. B. Storey, Santa Fe; P. E. Crowley, New York Central; Daniel Willard, Baltimore & Ohio, and H. G. Hetzler, Chicago & Western Indiana. Members of the engineers' committee are L. C. Fritch, Rock Island, chairman; G. A. Harwood, New York Central; E. H. Lee, Chicago & Western Indiana; G. W. Harris, Santa Fe, and L. G. Curtis, Baltimore & Ohio, Chicago Terminal. Legal departments of the roads will appoint representatives to be members of a law committee.

The Steel Car Bill

A sub-committee of the Senate committee on interstate commerce has made a favorable report on the bill S.863, "for the protection of persons employed on railway express cars, railway baggage cars and railway express-baggage cars," with certain amendments including a change in the effective date to July 1, 1927. After that date the bill provides that all such cars and their parts shall be of such construction, style and strength and furnished in such manner as shall be required by the Interstate Commerce Commission, and that the commission shall not allow to be used any such car not constructed of steel or steel underframe or of equally indestructible material, except that it may grant relief from this requirement for short trains or trains operated for short distances at a low rate of speed and the requirements will not apply when the cars are locked or sealed and not carrying persons. After July 1, 1927, such cars accepted for service or contracted for would be required to be of steel and in accordance with regulations made by the commission. The amendments are intended to meet some of the objections made by the railroads on the ground of expense.

Conservatives Vigorously Oppose

C. N. R. Branch Lines

It required half a day this week for the select committee on railways, canals and telegraph lines to report to the Canadian House of Commons one of the 26 branch line bills introduced in the House by the Minister of Railways and Canals. The Conservatives fought to the last ditch against this first bill, which provides for the construction of a branch in New Brunswick from Kingsclear to St. Croix, 41 miles, at an estimated cost of \$2,123,000. In explaining the purpose of this line Gerard G. Ruel, general counsel of the Canadian National, stated that this was far from being a political road, such as had been suggested by some Conservative critics, but it was purely a railway proposition and had been urged for years by the Intercolonial Railway officials, who argued that it was essential for that road to have a gateway into the United States independent of the Canadian Pacific. Mr. Ruel stated that as it was now the Canadian National had to hand over at St. John or Fredericton to the Canadian Pacific any traffic of theirs destined for the United States. It was proposed, if Parliament gave the authority, to build the first 14 miles from Kingsclear to Harvey and then negotiate with the Canadian Pacific for running rights over its line from Harvey to the St. Croix river. So long as the Canadian National could operate its own

trains with its own engines and crews to the boundary that road would be satisfied. There were two main reasons for asking power to build the road and get this gateway into the United States. One was to get an outlet for the rapidly increasing quantity of products from Northern New Brunswick to the United States market, and another reason was to facilitate the securing from United States roads of the large number of cars "lost" every year on American roads. Even with running rights over the C. P. R. to the boundary they could get their own cars back to their own lines in the interior, but otherwise it was impossible.

The Conservatives urged that the bill be held up pending a conference with the C. P. R. to see if that road would grant running rights, but Mr. Ruel stated that authority to build would first have to be given before negotiations could be opened. If those running rights are not granted the Canadian National would not build the remaining 27 miles of the proposed line.

Another stage has been reached in the progress of the bills through Parliament. Last Friday night witnessed the passage of the last five of the resolutions and the introduction of the bills based thereon and the second reading of these bills and their reference to committee where even more information than was asked for in the House may be demanded by the critics of the program. After they are approved finally by that committee they will return to the House for third reading and passage and then sent to the

OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM ROADS IN THE UNITED STATES
(FOR 193 STEAM ROADS, INCLUDING 15 SWITCHING AND TERMINAL COMPANIES)

For the Month of February, 1924 and 1923

Item	United States		Eastern District		Pocahontas Region		Southern Region		Western District		
	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923	
Average No. of miles operated	235,905.88	235,873.77	59,439.03	59,346.93	5,455.53	5,448.92	38,340.70	38,436.12	132,670.62	132,641.80	
Revenues:											
Freight	\$352,442,576	\$326,835,502	\$161,856,949	\$151,489,142	\$16,096,410	\$13,129,927	\$50,178,595	\$46,905,495	\$124,310,622	\$115,310,938	
Passenger	83,363,484	879,134,588	38,536,831	36,573,410	1,865,506	1,817,014	13,146,938	12,383,104	29,814,209	28,361,060	
Mail	7,741,717	7,308,399	2,905,839	2,717,431	193,101	163,694	1,096,803	1,019,993	3,545,974	3,407,281	
Express	11,212,338	9,851,469	5,021,909	5,100,134	233,443	241,246	1,525,716	1,004,701	4,431,270	3,505,388	
All other transportation	14,651,268	13,971,041	8,368,151	8,101,056	145,413	144,627	887,820	826,684	5,249,884	4,898,674	
Incidental	8,685,279	9,257,214	4,399,114	5,204,498	303,728	298,187	1,109,589	1,079,512	2,872,848	2,675,017	
Joint facility—Cr.	1,032,188	804,713	329,800	365,487	12,413	11,413	124,809	134,422	565,166	293,391	
Joint facility—Dr.	214,593	214,056	114,400	109,095	1,723	1,795	31,791	33,278	66,679	69,888	
Railway operating revenues	478,914,257	446,948,870	221,304,193	209,442,063	18,848,291	15,804,313	68,038,479	63,320,633	170,723,294	158,381,861	
Expenses:											
Maintenance of way and structures	54,379,869	48,418,007	22,922,539	20,196,205	2,516,628	1,804,265	8,501,576	7,914,059	20,439,126	18,503,478	
Maintenance of equipment	106,969,858	112,125,967	52,257,678	55,326,687	4,784,360	4,226,015	13,048,560	12,922,990	36,879,260	39,650,275	
Traffic	7,921,387	7,373,657	2,983,223	2,776,376	195,523	177,734	1,448,773	1,396,166	3,293,868	3,023,381	
Transportation	188,649,292	192,098,865	91,422,812	94,529,049	6,386,674	5,911,561	24,688,365	24,311,725	66,151,441	67,346,530	
Miscellaneous operations	3,902,269	3,739,702	1,906,115	1,869,889	83,938	82,180	442,769	399,682	1,469,447	1,387,951	
General	13,684,974	12,703,552	6,113,505	5,615,288	398,785	373,593	1,787,560	1,659,188	5,385,124	5,055,483	
Transportation for investment	—Cr.	807,722	453,127	115,097	37,922	17,015	6,633	103,398	78,185	572,212	330,387
Railway operating expenses	374,699,927	376,006,623	177,490,775	180,275,572	14,348,893	12,568,715	49,814,205	48,525,625	133,046,054	134,636,711	
Net revenue from railway operations	104,214,330	70,942,247	43,813,418	29,166,491	4,499,398	3,235,598	18,224,274	14,795,008	37,677,240	23,745,150	
Railway tax accruals	25,711,985	24,411,514	9,944,294	9,055,706	1,153,161	919,156	3,504,939	3,245,287	11,109,591	11,191,365	
Uncollectible railway revenue	213,332	161,642	74,438	83,485	2,194	9,624	10,925	8,834	125,775	59,699	
Railway operating income	78,289,013	46,369,091	33,794,686	20,027,300	3,344,043	2,306,818	14,708,410	11,540,887	26,441,874	12,494,086	
Equipment rents—Dr. balance	5,565,886	5,483,255	3,683,989	4,267,070	379,111	484,068	574,820	968,139	1,686,194	732,114	
Joint facility rent—Dr. balance	1,531,463	1,610,939	654,271	809,796	110,443	80,007	96,343	38,196	670,406	682,940	
Net railway operating income	71,191,664	39,274,897	29,456,432	14,950,434	3,612,711	2,710,879	14,037,247	10,534,552	24,085,274	11,079,032	
Ratio of expenses to revenue (per cent)	78.24	84.13	80.20	86.07	76.13	79.53	73.21	76.63	77.93	85.01	
Average number of miles operated	235,907.47	235,861.40	59,439.98	59,347.45	5,455.53	5,447.82	38,339.47	38,436.20	132,672.49	132,629.93	
For Two Months Ended With February, 1924 and 1923											
Revenue:											
Freight	\$686,011,683	\$693,884,863	\$314,038,166	\$319,739,366	\$31,148,280	\$27,256,801	\$96,806,658	\$97,043,346	\$244,018,579	\$249,845,350	
Passenger	175,089,538	170,259,771	80,812,084	79,339,263	3,959,570	3,893,632	27,452,234	26,017,286	62,865,660	61,009,590	
Mail	15,647,833	14,771,631	5,950,188	5,480,054	384,574	324,600	2,225,604	2,092,317	7,087,467	6,874,660	
Express	21,702,142	20,747,737	9,640,205	10,633,172	469,337	532,656	2,951,865	2,166,104	8,640,735	7,415,805	
All other transportation	29,364,907	29,267,403	16,748,233	17,046,135	294,311	302,277	1,731,374	1,718,889	10,590,989	10,200,102	
Incidental	18,370,689	19,333,716	9,376,447	10,728,034	644,663	589,537	2,267,049	2,154,256	6,082,530	5,861,889	
Joint facility—Cr.	2,114,080	1,647,782	714,081	733,456	30,026	25,518	267,812	280,967	1,102,161	607,841	
Joint facility—Dr.	422,260	409,929	198,951	197,511	3,716	7,243	62,705	60,586	156,888	144,589	
Railway operating revenues	947,878,612	949,502,974	437,080,453	443,501,969	36,927,045	32,917,778	133,639,881	131,412,579	340,231,233	341,670,648	
Expenses:											
Maintenance of way and structures	109,685,026	101,307,509	46,685,808	42,920,293	4,821,103	3,793,843	17,141,053	16,309,778	41,037,062	38,283,595	
Maintenance of equipment	217,296,952	235,144,468	105,832,818	116,747,155	9,459,304	9,063,467	26,813,908	27,083,241	75,190,922	82,250,605	
Traffic	16,014,227	14,848,469	6,014,656	5,472,240	397,859	374,896	2,987,859	2,811,452	6,613,853	6,189,881	
Transportation	382,363,903	400,556,986	182,930,276	196,527,480	12,806,620	12,334,109	50,345,307	50,261,242	136,281,700	141,434,155	
Miscellaneous operations	8,115,276	7,857,011	3,956,814	3,994,565	165,636	157,378	990,340	789,103	3,102,486	2,915,965	
General	28,066,195	26,242,789	12,494,192	11,588,023	813,606	758,057	3,647,489	3,402,967	11,110,908	10,493,742	
Transportation for investment	—Cr.	1,880,918	1,010,390	235,516	93,125	31,711	21,292	214,937	203,450	1,398,754	662,523
Railway operating expenses	759,660,661	784,946,842	357,679,048	377,156,631	28,432,417	26,460,458	101,611,019	100,454,333	271,938,177	280,875,420	
Net revenue from railway operations	188,217,951	164,556,132	79,401,405	66,345,338	8,494,628	6,457,320	32,028,862	30,958,246	68,293,056	60,795,228	
Railway tax accruals	51,599,961	49,915,605	20,268,727	18,995,592	2,304,837	1,864,989	6,692,476	6,413,603	22,333,921	22,641,421	
Uncollectible railway revenue	369,686	261,270	146,389	134,801	3,544	10,569	28,466	18,686	191,287	97,214	
Railway operating income	136,248,304	114,379,257	58,986,289	47,214,945	6,186,247	4,581,762	25,307,920	24,525,957	45,767,848	38,056,593	
Equipment rents—Dr. balance	10,670,261	10,901,750	6,800,533	8,397,045	d 718,275	d 914,489	930,673	1,490,460	3,657,330	1,928,734	
Joint facility rent—Dr. balance	3,092,834	3,016,234	1,379,310	1,462,187	227,216	165,782	211,794	119,160	1,274,514	1,269,105	
Net railway operating income	122,485,209	100,461,273	50,806,446	37,355,713	6,677,306	5,330,469	24,165,453	22,916,337	40,836,004	34,858,754	
Ratio of expenses to revenue (per cent)	80.14	82.67	81.83	85.04	77.00	80.38	76.03	76.44	79.93	82.21	

^a Includes \$2,604,438 sleeping and parlor car surcharge. ^b Includes \$2,540,465 sleeping and parlor car surcharge. ^c Includes \$5,326,859 sleeping and parlor car surcharge. ^d Deficit or other reverse items.

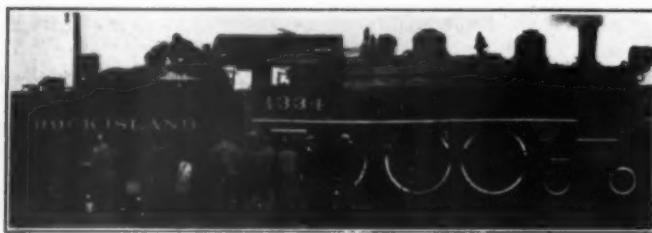
Compiled by the Interstate Commerce Commission. (Subject to revision.)

Senate, where it is expected some of the bills will be thrown out. When the remaining resolutions were being considered in the House last Friday night Donald W. Kennedy, Progressive member for West Edmonton, resented the suggestion made by Conservative members that the Liberal government had purchased the support of Western Progressive members by this branch line program, most of which was provision for Western lines. He also denied that there was no financial justification for the building of certain lines. Mr. Kennedy then produced some figures showing the relative performance of the three regions into which the Canadian National is divided. In 1923 the operating revenue of the Atlantic region was \$22,000,000 and its operating expenses \$27,000,000; the revenues of the Central region totaled \$127,000,000 and the expenses \$109,000,000; the revenues of the Western region \$72,000,000, and the expenses \$74,000,000.

"As regards the Central region," said Mr. Kennedy, "while there is a net operating revenue of \$18,000,000, almost \$17,000,000 of that is made up of Grand Trunk earnings, and it is hardly fair to compare the newer railways that have been built west and east, in a general way, with the old established Grand Trunk. But if we compare the newer railways in the West with the newer railways in the Atlantic and Central regions, we find that against a net operating loss in the West of \$2,000,000 there is a net operating loss in the East—that is, taking the Central region and the Atlantic region together—of \$4,000,000. So it would seem, from these figures, that the Western lines are justified in spite of the statements that have been made in this House to the effect that the East was paying for the Western lines."

Milk Used in Locomotive Instead of Coal

The Chicago, Rock Island & Pacific, on April 24, ran a special train of five cars carrying 200 children, from LaSalle street station to 91st street and return, a distance of 20 miles, using lumps of powdered milk as fuel instead of coal. The run was made at the



Engine Burning Powdered Milk

request of Dr. Herman N. Budesen, health commissioner of Chicago, who wished to emphasize and advertise his axiom, "Milk is to the human body as fuel is to the locomotive," which he is using in his campaign to educate children regarding the value of milk. The locomotive was first fired with coal but fire was maintained



Powdered Milk Used as Fuel

throughout the run with briquets of dried milk made especially for the occasion. The heat given off per pound of milk is stated to be 10,000 B. t. u., while that of coal is 11,000. The weight of milk consumed during the run was greater than the amount of coal that is used on the same run ordinarily.

Chicago Conference on Crossing Problem

The first annual conference for the prevention of railroad highway crossing casualties, under the auspices of the National Association of Railroad and Utilities Commissioners, was held at the Congress Hotel, Chicago, on April 30 and May 1. With an attendance of 150, of those registering 61 were representatives of railroads and 29 of state commissions.

The meeting was called to order by H. G. Taylor, president of the association, who read a letter from President Coolidge expressing the hope that means will be found to lessen the casualties resulting from grade crossing accidents. R. W. Campbell, general solicitor of the Illinois Steel Company, was appointed chairman of the day.

William D. B. Ainey, chairman of the (Pennsylvania) Public Service Commission, made an address in which he emphasized the need of grade separation under a program such that the railroads and the states can participate without doing themselves harm. He urged that money be spent where the largest number of lives can be saved in the shortest time. H. A. Rowe, chairman of the committee on the prevention of highway crossing accidents of the American Railway Association, spoke on "The Crossing from a Railroad Standpoint." He outlined the work done by the A. R. A. and by the railroads and the results which had followed their efforts. He also outlined the program for the education of the public in care of crossings which he called the only present solution of the problem. He spoke of the used car situation; used cars are so cheap that persons mentally unfit to drive a car can secure one if they have \$5 or \$10 to make the first payment.

William McAndrews, superintendent of schools, Chicago, spoke on "The Youth Upon the Highways." He reviewed the work being done in the schools to train children in safety precaution.

Others addressing the meeting were A. W. Whitney, of the National Bureau of Casualty and Surety Underwriters, on elements in the training of children in measures of safety; N. H. Loomis, general solicitor of the Union Pacific; George M. Graham, of the National Automobile Chamber of Commerce; Frank Mulholland, president of the North Dakota Board of Road Commissioners; C. L. Bardo, chairman of the committee on grade crossing protection of the American Railway Association; F. E. Jack, of the American Automobile Association, and L. Palmer, of the National Safety Council.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—F. M. Nellis, 165 Broadway, New York City. Next convention, May 6-9, 1924, Montreal, Canada. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION.—Joseph Sinkler, Pilot Packing Company, 122 South Michigan Ave., Chicago. Meeting with Air Brake Association.

AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—L. A. Stone, C. & E. I. Ry., Chicago.

AMERICAN ASSOCIATION OF ENGINEERS.—C. E. Drayer, 63 E. Adams St., Chicago.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—Grant Williams, 1341 Railway Exchange, Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 So. Michigan Ave., Chicago. Next meeting, June 3, 1924, Montreal, Canada.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York. Next meeting, September 29 and 30, New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothchild, Room 400, Union Station, St. Louis, Mo. Next meeting, June 18-20, 1924, Buffalo, N. Y.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—J. W. Welsh, 8 W. 40th St., New York.

AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.—C. Borcherdt, 202 North Hamilton Ave., Chicago, Ill.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y. Special meeting, May 13, Blackstone Hotel, Chicago.

Division I.—Operating, J. C. Caviston, 30 Vesey St. New York, N. Y.

Freight Station Section (including former activities of American Association of Freight Agents).—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association).—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting July 9-11, Brown Palace Hotel, Denver, Colo.

Safety Section.—J. C. Caviston, 30 Vesey St., New York. Annual meeting, June 24-26, Newhouse Hotel, Salt Lake City, Utah.

Telegraph and Telephone Section (including former activities of the Association of Railway Telegraph Superintendents).

Division II.—Transportation (including former activities of the

Association of Transportation and Car Accounting Officers).—G. W. Covert, 431 South Dearborn St., Chicago, Ill.

Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York.

Division IV.—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Next annual meeting, March 10-12, 1925, Chicago. Exhibit by National Railway Appliances Association.

Construction and Maintenance Section.—E. H. Fritch.

Electric Section.—E. H. Fritch.

Signal Section (including former activities of the Railway Signal Association).—H. S. Balliet, 30 Vesey St., New York, N. Y. Next "stated meeting," Sept. 22, 1924, Ocean View Hotel, Swampscott, Mass.

Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Annual convention, June 11-18, 1924, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers' Association.

Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.

Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association).—W. J. Farrell, 30 Vesey St., New York, N. Y. Annual meeting, June 16-18, Chalfonte-Haddon Hall, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers' Association.

Division VII.—Freight Claims (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill. Annual meeting, 1925, Kansas City, Mo.

Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Next annual convention, Oct. 21-23, 1924, Kansas City, Mo. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—W. H. Hill, Agricultural Agent, New York Central, Chicago. Next annual meeting, May 14-16, 1924, Savannah, Ga.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railway Association, Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Annual meeting, March 10-12, 1925, Chicago. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—(See American Railway Association, Division V.)

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—J. A. Duca, Tool Foreman, C. R. I. & P. Ry., Shawnee, Okla. Annual convention, August 28-30, Hotel Sherman, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittlesey, 1319-21 F St., N. W., Washington, D. C.

AMERICAN SOCIETY FOR STEEL TREATING.—W. H. Eisenman, 4600 Prospect Ave., Cleveland, Ohio. Next convention, Sept. 22-26, Commonwealth Pier, Boston.

AMERICAN SOCIETY FOR TESTING MATERIALS.—C. L. Warwick, 1315 Spruce St., Philadelphia, Pa. Annual meeting, June 23-27, Chalfonte-Haddon Hall, Atlantic City, N. J.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Prof. J. H. Dunlap, 33 W. 39th St., New York. Regular meetings 1st and 3rd Wednesdays in month, except July and August, 33 W. 39th St., New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, A. F. Stuebing, Chief Engineer, Bradford Draft Gear Co., 23 W. 43rd St., New York.

AMERICAN TRAIN DISPATCHERS' ASSOCIATION.—C. L. Darling, 1310-1311 Mallers Bldg., Chicago, Ill.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—P. R. Hicks, Room 1146, Otis Bldg., Chicago. Next convention, 1925, Chicago.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, Northern Pacific Ry., St. Paul, Minn. Annual meeting, May 21-24, 1924, West Baden Springs, Ind.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Semi-annual meeting, June 12, 1924, Hotel Dennis, Atlantic City, N. J. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.

ASSOCIATION OF RAILWAY SUPPLY MEN.—A. W. Clokey, 1658 McCormick Bldg., Chicago. Meeting with International Railway General Foremen's Association.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—(See American Railway Association, Division I.)

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—(See American Railway Association, Division II.)

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—John Nelson, Joseph E. Nelson & Sons, 3240 South Michigan Ave., Chicago. Meeting with convention of American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—W. A. Booth, 53 Rushbrook St., Montreal, Que.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.

CAR FOREMAN'S ASSOCIATION OF ST. LOUIS, MO.—R. E. Giger, 721 North 23rd St., East St. Louis, Ill. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.

CENTRAL RAILWAY CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday, January to November. Interim meetings, 2nd Thursday, February, April, June, Hotel Statler, Buffalo, N. Y.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago. Annual meeting, September 16-18, Sherman Hotel, Chicago.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.—Bradley S. Johnson, W. H. Miner, Rockery Bldg., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.

CINCINNATI RAILROAD CLUB.—W. C. Cooder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.

CLEVELAND STEAM RAILWAY CLUB.—F. L. Frericks, 14416 Adler Avenue, Cleveland, O. Meetings, first Monday each month, Hotel Cleveland, Public Square, Cleveland.

DIXIE RAILWAY CLUB.—T. C. Schley, 71 Conti St., Mobile, Ala. Regular meetings, bi-monthly, second and fourth Fridays, Battle House Hotel, Mobile, Ala.

EASTERN RAILROAD ASSOCIATION.—E. N. Bessling, 614 F St., N. W., Washington, D. C.

FREIGHT CLAIM ASSOCIATION.—(See American Railway Association, Division VII.)

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—C. H. Treichel, Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3rd Friday in month, Room 1414, Manhattan Bldg., Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Annual convention, August 19-21, 1924, Hotel Sherman, Chicago. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.—George P. White, 747 Railway Exchange, Chicago. Meeting with International Railroad Master Blacksmiths' Association.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. B. Hutchison, 6000 Michigan Ave., Chicago. Next convention, May 26-29, 1924, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn. Annual convention, September 9-12, Hotel Sherman, Chicago.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—Bard Browne, Superheater Co., 17 E. 42nd St., New York. Meeting with International Railway Fuel Association.

MASTER BOILER MAKER'S ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York. Next convention, May 20-23, 1924, Hotel Sherman, Chicago.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.—(See A. R. A., Division V.)

MASTER CAR BUILDERS' ASSOCIATION.—(See A. R. A., Division V.)

NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.—J. S. Penney, T. J. Moss Tie Company, St. Louis, Mo. Next convention, 1925, Chicago.

NATIONAL ASSOCIATION OF RAILWAY AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York. Next convention, Nov. 11, 1924, Phoenix, Ariz.

NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, People's Gas Bldg., Chicago. Annual exhibition at convention of American Railway Engineering Association.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: E. R. Cott, Safety Agent, Hocking Valley Ry., Columbus, O.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July and August, at 29 W. 39th St., New York.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2nd Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut St., Philadelphia, Pa.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY DEVELOPMENT ASSOCIATION.—(See Am. Ry. Development Assn.)

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, General Electric Co., Chicago. Annual meeting with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—H. A. Varney, Sunbeam Electric Manufacturing Co., Evansville, Ind. Meeting with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY REAL STATE ASSOCIATION.—R. H. Morrison, C. & O. Ry., Richmond, Va.

RAILWAY SIGNAL ASSOCIATION.—(See A. R. A., Division IV, Signal Section.)

RAILWAY STOREKEEPERS' ASSOCIATION.—(See A. R. A., Division VI.)

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Exhibit at meetings of A. R. A., Divisions V. and VI, June 11-18, 1924, Atlantic City, N. J.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa. Annual meeting, September 18 and 19, Montreal, Canada.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Next convention, September 16-18, 1924, New York. Exhibit by Track Supply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Fraenthal, Union Station, St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.

SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—J. E. Rubley, Southern Railway Shop, Atlanta, Ga. Meets semi-annually.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. L. Carrier, Car, Serv. Agent, Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.

SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—H. S. White, 9 N. Jefferson St., Chicago.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo-Ajax Corporation, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Next convention, September 9-14, 1924, Chicago. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN RAILWAY CLUB.—Bruce V. Crandall, 605 North Michigan Ave., Chicago. Annual meeting, May 23, Edgewater Beach Hotel, Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

WESTERN SOCIETY OF ENGINEERS.—Edgar S. Nethercut, 1735 Monadnock Bldg., Chicago, Ill.

Traffic News

The American Association of Passenger Traffic Officers will hold its annual meeting in New York City on Monday and Tuesday, September 29 and 30.

The Pittsburgh passenger traffic office of the Southern Railway has been moved from the Jenkins Arcade building to the Oliver building, Smithfield street.

The Chicago, Rock Island & Pacific, on May 18, will put on a new daily train between St. Louis, Mo., and Denver, Colo., to be known as the Colorado Flyer, to leave St. Louis at 9 a. m. and arrive at Denver at 12:55 p. m. the next day.

The Colorado mountains and the national parks of Colorado are being advertised throughout the east by the Pennsylvania Railroad; which is sending out circulars advising people to go west on their vacations this summer and describing the western country.

The Missouri Pacific, on May 4, will inaugurate a new passenger train between St. Louis, Mo., and Wichita, Kans., to be known as the Sunflower. The train will leave St. Louis at 7:30 p. m. daily, arriving in Wichita at 9:55 a. m. the following day.

The Southern has placed in service a new daily freight train from Cincinnati, Ohio, and Louisville, Ky., to Asheville, N. C., which will be known as the "Tennessee-Carolina Automobile Special." This train handles all automobiles, trucks and motor car parts and accessories received by the Southern at Cincinnati and Louisville for territory reached through Knoxville, Tenn., and Asheville.

Automobiles Take the Place of Railroad Trains

The Southern Pacific has discontinued the operation of most or all of its passenger trains on a number of minor lines in Oregon and the passenger business has been turned over to auto bus lines operating on the public highways, which run approximately parallel to the railroad lines. These lines are the following: Whiteson-Willamina, 20 miles; Salem-Black Rock, 25 miles; Geer-Salem, 10 miles; Geer-Woodburn, 20 miles; Lebanon-Brownsville, 17 miles.

Two steam passenger trains which formerly were operated between Tallman and Geer have been extended and now run through to and from Portland via Silverton and Woodburn.

The bus lines will carry passengers on nearly the same schedules as were made by the trains and at the railroad tariff rates.

The freight service on these lines is being continued and in some cases mixed trains will be run.

Short Lines Propose Distribution of "Excess" Earnings Through Divisions

The American Short Line Railroad Association has sent to the Interstate Commerce Commission a resolution adopted at a recent convention of the association earnestly appealing to the commission to more largely exercise the powers conferred by the terms and provisions of the Transportation Act of 1920, especially paragraph (6) of section (15) with regard to divisions of joint rates, "so that the varying needs and the widely varying earning power of the carriers shall not only be fully considered, but the earning power of the short and weak roads built up and the purpose of Congress thus accomplished."

"We believe that if the law is vigorously administered and applied and the revenues derived from the rate structure shall be equitably distributed as Congress intended," the resolution says, "there will be no earnings substantially in excess of the fair return and many short and weak roads now finding it difficult to continue operation will be preserved and enabled to function more efficiently in the public interest."

"We further believe that the commission has the power to relieve from re-capture of excess earnings that class of short line roads whose service life is limited and that the commission should and will exercise this power."

Labor News

The Wabash has awarded a wage increase to its 2,600 clerical employees to aggregate approximately \$125,000 annually.

Wage schedule negotiations affecting 5,000 engineers and firemen employed on the Canadian Pacific, members of the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen, are proceeding in Montreal.

Negotiations between representatives of the western railways and of the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen were continued in Chicago throughout this week. Representatives of the employees are demanding a wage increase of five per cent such as has been granted individually by several eastern roads. Various changes in working rules are proposed by the railways.

L. E. Sheppard, president of the Order of Railway Conductors has issued a statement denying the announcement of Warren S. Stone, president of the Brotherhood of Locomotive Engineers, that the four train and engine service brotherhoods will support the candidacy of Robert M. La Follette for President of the United States. "The brotherhoods have taken no action," said Mr. Sheppard, "and none will be taken until the conventions are held and we see who is nominated and the platforms on which they will run."

The wage dispute with the maintenance of way employees on the Canadian National has been amicably settled. The announcement was made by P. H. Fljosdal, grand president of the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers. The agreement, which was reached after the contending sides had compromised some of their demands, averted a strike of the men who had voted in favor suspension of work. The readjusted wage schedule was not made public.

The United States Circuit Court of Appeals has affirmed a decision of the United States District Court for the Western division of the Western district of Missouri in which a man was held in contempt of court for violation of the injunction against strike violence, granted during the strike of shop crafts employees in 1922. The defendant, although not a striker, had participated in an assault on a St. Louis-San Francisco employee who had continued at work. The plea that the act had been committed in the Southern division of the Western district of Missouri and was therefore outside the jurisdiction of the court of the Western division was over-ruled by the Court of Appeals.

Labor Bill Criticized

Speeches in opposition to the Howell-Barkley railroad labor bill, which is to come up for consideration in the House on May 5 on a motion to discharge the committee on interstate commerce from further consideration of the bill, were made in the House on April 29 by Representatives Tincher of Kansas and Blanton of Texas. Mr. Tincher said that the bill ought to be called the "resumption of strikes" bill. He criticized it on the ground of the expense involved for the numerous boards provided, and said that it makes the "sudden and rapid and revolutionary departure of making it obligatory upon the judicial officer to be partial and partisan and a member of the union." He had previously introduced a bill to abolish the Labor Board and give its power to the Interstate Commerce Commission, but he said he was not now in favor of "repealing the only agency that seems to have any interest in the public and turning it over to the warring factions." He said that of the 154 members who signed the motion to discharge the committee many had told him they had not read the 40-page bill and that when it comes before the House the House will require four months to perfect it or will "take the dictation of the gentleman from Alabama (Representative Huddleston), who told us the other day that this is labor's bill; you must vote for it or you are against labor."

Equipment and Supplies

Locomotives

THE CHESAPEAKE & OHIO, reported in the *Railway Age* of April 26 as inquiring for prices on 100 heavy and 50 light Mikado type locomotives has ordered from the American Locomotive Company, 50 Mikado type locomotives to have cylinders 28 in. by 32 in. and a total weight in working order of 360,000 lb., also 50 Mikado type to have cylinders 28 in. by 30 in. and a total weight in working order of 354,000 lb.

Freight Cars

SWIFT & Co. are inquiring for 1,000 steel underframes.

THE SOUTHERN PACIFIC has ordered 30 automatic dump cars from the Case Crane & Engineering Company.

THE AMERICAN SMELTING & REFINING Co. is inquiring for 15 general service gondola cars of 50 tons' capacity.

Passenger Cars

BOSTON & ALBANY.—See New York Central.

THE NEW YORK CENTRAL is inquiring for 25 suburban coaches for the Boston & Albany.

THE RICHMOND, FREDERICKSBURG & POTOMAC is inquiring for 2 steel passenger coaches and 3 baggage cars.

THE CARO NORTHERN has ordered one railway motor car from the Edwards Railway Motor Car Company.

THE CAPE FEAR RAILWAYS, Fayetteville, N. C., bought a motor car to seat 50 passengers from the Edwards Railway Motor Car Company.

THE EL PASO & SOUTHWESTERN, reported in the *Railway Age* of March 22 as inquiring for 3 buffet baggage cars and 1 dining car, has ordered this equipment from the American Car & Foundry Company.

Iron and Steel

THE BALTIMORE & OHIO has awarded a contract to the Fort Pitt Bridge Works of Pittsburgh, Pa., covering the fabrication and delivery of approximately 5,300 tons of steel bridge superstructures. The work covers practically every class of steel bridge structure. Delivery is to commence July 1.

Machinery and Tools

THE CHESAPEAKE & OHIO is inquiring for five 25-ton locomotive cranes and four ditchers.

THE GULF, COLORADO & SANTA FE has ordered two 15-ton cranes from the Whiting Corporation.

THE CHICAGO, BURLINGTON & QUINCY has ordered two ditchers from the American Hoist & Derrick Company.

THE ATCHISON, TOPEKA & SANTA FE has ordered a 25-ton locomotive crane from the American Hoist & Derrick Company.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for one 250-ton crane with two 125-ton trolleys, one 175-ton crane with two 87½-ton trolleys, two 18-ton cranes and one 10-ton crane.

THE GREAT NORTHERN is inquiring for a steam operated locomotive crane of 30 tons' capacity at 15 ft. radius, 20 ton at 22 ft. radius, 50 ft. boom, to be self-propelling at a speed of 15 miles an hour.

THE CHICAGO, BURLINGTON & QUINCY is inquiring for two dry grinders, one pipe cutting and fitting machine, one 300-lb. helve hammer, one 18-in. by 10-ft. engine lathe and one electric tool post grinder.

Signaling

THE NEW YORK CENTRAL has awarded to the General Railway Signal Company a contract for electric interlocking at Selkirk, N. Y., 60 working levers and 36 spare spaces.

THE CANADIAN NATIONAL has ordered from the Hall Switch & Signal Company, for installation at London, Ontario, 18 single unit light signals, 4 style L motor signals and 26 relays.

THE NEW YORK CENTRAL has ordered from the General Railway Signal Company, for installation between Graytown, Ohio, and Milbury, 64 color light signals, 113 relays and other material.

THE NEW YORK CENTRAL has ordered from the General Railway Signal Company material for a mechanical interlocking machine to be installed at Geneva, N. Y.; 59 working levers and 13 spare spaces.

THE LOUISVILLE & NASHVILLE has ordered from the General Railway Signal Company material for an electro mechanical interlocking at Catuma, Ala.; and material for automatic block signaling between Louisville, Ky., and Montfort, Tenn., 174 miles; 299 semaphore signals, 567 relays and other material; all to be installed by the railroad company's forces.

THE CHICAGO & NORTH WESTERN has ordered from the General Railway Signal Company material for an electric interlocking at Cedar Rapids, Ia., 31 working levers and 5 spare spaces. The levers are to be equipped with individual polarized relays. Also an order has been given for an electric interlocking plant at Clinton, Ia., to be installed by the manufacturer; 45 working levers and 15 spare spaces.

G. R. S. Train Control on the New York Central

The apparatus to be furnished by the General Railway Signal Company for automatic continuous inductive train control on the New York Central Lines is to be installed first on three 10-mile sections of three roads, as follows: Boston & Albany, between West Springfield, Mass., and Westfield; C. C. C. & St. L., between Mt. Jackson, Ind., and Washington; Michigan Central, between Dearborn, Mich., and Wayne. Each of these three preliminary orders calls for equipment for 10 locomotives.

THE CENTRAL NEW ENGLAND has filed a petition with the Interstate Commerce Commission for an annulment, as to the C. N. E., of the order of January 14, requiring an installation of automatic train control.

LOCOMOTIVE REPAIR SITUATION—FORMER METHOD OF COMPILATION

Date	No. locomotives on line	No. serviceable	No. stored, serviceable	No. held for repairing over 24 hours	Per cent	No. held for repairing less than 24 hours	Per cent	Total held for repairing pairs	Per cent
Jan. 1.	64,453	48,905	576	13,587	21.1	1,962	3.0	15,549	24.1
April 1.	64,559	50,107	914	12,801	19.8	1,651	2.6	14,452	22.4
July 1.	63,906	52,456	2,181	10,326	16.2	1,124	1.8	11,450	18.0
Oct. 1.	63,982	54,159	2,620	8,789	13.7	1,034	1.6	9,823	15.3
1924									
Jan. 1.	64,406	54,031	5,061	9,395	14.6	980	1.5	10,375	16.1

LOCOMOTIVE REPAIR SITUATION—NEW METHOD OF COMPILATION

Date	No. locomotives on line	No. serviceable	No. stored, serviceable	No. requiring classified repairs	Per cent	No. requiring running repairs	Per cent	Total requiring repairing pairs	Per cent
Feb. 1.	64,377	53,586	4,116	5,919	9.2	4,872	7.6	10,791	16.8
Mar. 1.	64,431	53,127	3,800	6,047	9.4	5,257	8.1	11,304	17.5
April 1.	64,363	52,805	4,648	6,128	9.5	5,430	8.4	11,558	17.9

Supply Trade News

The Chicago Bridge & Iron Works is planning an extension to its fabricating shop at Chicago.

The Equipment Specialties Company has moved its Chicago office to room 936, 310 South Michigan avenue.

The Union Asbestos & Rubber Company has moved its Chicago office to room 936, 310 South Michigan avenue.

The Ohio Injector Company is planning the construction of a three-story addition to its factory at Wadsworth, Ohio.

The Sullivan Machinery Company, Chicago, has moved its Pittsburgh office to Rooms 517-520, Farmers Bank building.

The Locomotive Stoker Company has moved its New York offices from 50 Church street to the new Westinghouse building 150 Broadway.

The Westinghouse Electric & Manufacturing Company has moved its New York offices to the new Westinghouse building, 150 Broadway.

L. A. Marshall, service manager of the Industrial Works, Bay City, Mich., has been appointed sales engineer, with headquarters at Chicago.

The Pressed Steel Car Company and the Western Steel Car & Foundry Company have moved their Chicago offices to 604 Corn Exchange Bank Building, 134 S. LaSalle street.

Robert Huff, New York representative of the McConway & Torley Co., Pittsburgh, Pa., has removed his office from 2 Rector street to Room 1728, 30 Church street.

The Austin Company, Cleveland, Ohio, has removed its Chicago office from the Continental & Commercial Bank building to suite 1300 Burnham building, 160 North La Salle street.

E. H. Benners and R. W. Benners, railway sales representatives at New York of the American Forge & Machine Co., Canton, Ohio, have removed their office from 2 Rector street to 30 Church street.

D. S. Wood, district sales manager of the Niles-Bement-Pond Company, with headquarters at Philadelphia, Pa., has been transferred to Chicago, succeeding Samuel G. Eastman who has been granted a leave of absence.

Austin M. Mueller, general manager of sales of Joseph T. Ryerson & Son, Inc., was the guest of honor at a dinner in Chicago on April 26 tendered by his associates to commemorate the completion of his 25 years' service with this company.

The Texas Creosoting Company has completed and placed in operation its timber preserving plant at Orange, Tex. The products of this plant are creosoted piles, poles, ties, timbers, cross-arms and sheet piles, particularly the Martinez interlock type.

The Edwards Railway Motor Car Company, Sanford, S. C. has decided to increase its capital stock \$500,000 and to begin work immediately erecting additional buildings, and providing necessary machinery to bring the output of the plant up to 30 cars a month.

Charles A. Coffin, former president of the General Electric Company, Schenectady, N. Y., was awarded a certificate of honorary membership in the Franklin Institute on April 16 at Philadelphia, Pa. This honor was conferred in recognition of Mr. Coffin's many achievements and contributions to the electrical industry.

Irving A. Pfeil, of the Chicago office of the Blaw-Knox Company, has been appointed manager of the company's Detroit branch, succeeding Herbert J. Desson, deceased. Mr. Pfeil graduated in civil engineering at Ohio Northern University. During the World War he served as lieutenant in the aviation section. He has been with the Blaw-Knox Company since 1919.

W. C. Peters, New England department manager at Boston, Mass., of the National Railway Appliance Company, New York, has been appointed manager of sales and engineering, with headquarters at New York, to succeed W. C. Lincoln, resigned. F. M. Richrads, salesman in the New York Office, has been appointed New England department manager at Boston, to succeed Mr. Peters.

A. R. Fathman, secretary and treasurer of the Western Tie & Timber Company, St. Louis, Mo., has been promoted to vice-president and will be succeeded by Thomas T. Poleman, assistant secretary and treasurer. Mr. Fathman entered railway service in 1897 as a clerk in the traffic department of the Missouri Pacific. He entered the employ of the Western Tie & Timber Company in 1907 and took charge of traffic, which position he held until 1920, when he was promoted to secretary and treasurer. Mr. Fathman is also a vice-president of the Kettle River Treating Company of St. Louis.

The Smith-Heylandt Company has been organized with offices at 2633 Fourth street, S. E., Minneapolis, Minn., to take over the patents, importation, sale and distribution of the Heylandt apparatus for the manufacture of oxygen and other gases by the liquefaction process. In addition to liquefaction apparatus, liquid oxygen breathing apparatus will also be manufactured. Elmer H. Smith, president of Smith's Inventions, Inc., and the Commercial Gas Company, is president of the new company. John R. R. Miles is secretary. Herman G. Amling of Maywood, Ill., a former representative of the Heylandt Company will co-operate with the new organization.

E. W. Allen, formerly engineer and assistant manager of the central district of the General Electric Company, with headquarters at Chicago, has been appointed manager of the engineering department of that company and A. F. Riggs has been appointed district engineer to succeed Mr. Allen. E. W. Allen was born in Buchanan, Va., on November 8, 1880, and was graduated from the Virginia Polytechnic Institute in 1900 with a B. S. degree in electrical engineering. He first entered the employ of the General Electric Company in January, 1901, in the test department at Schenectady, and in December of the following year he was assigned to the lighting engineering department, where he remained until September 30, 1911, when he was appointed engineer of the Chicago district. On September 1, 1913, he was appointed assistant district manager in addition to his duties as district engineer. Early in 1917 he entered the military service and served two years. He returned to the company in April, 1919.

Obituary

John Meeker High, manager of sales, railroad department of the Pantasote Company, Inc., New York, died suddenly of diphtheria in his fifty-fourth year, on April 24, while on a business trip in Chicago. John Meeker High, after a few years' business experience on the Pacific coast, came to New York, and in 1897 became associated with the Pantasote Company, Inc., in the sales department. His advancement was rapid, and in a few years he became manager of sales in the steam and electric railway fields, in which he established a very wide acquaintance and many strong friendships. In 1910 his jurisdiction was extended to cover also the management of sales of a large variety of railroad products known as Agasote and Pantasote. At the time of his death he was also secretary and director of the Agasote Millboard Company of Trenton, N. J., and a director of the Tuco Products Corporation.



J. M. High

T. W. Snow, president of the T. W. Snow Construction Company, Chicago, whose sudden death at his home in Batavia, Ill., on April 20, was reported in the *Railway Age* of April 26, was born on August 5, 1858, at Bloomingdale, Ind. He entered railway work in 1876 in the engineering department of the Chicago & North Western. For five years following he roughed it in the West to regain his health and in 1885 he entered the employ of the Pennsylvania Steel Company. He established the Chicago office and continued his association with that company for three years. In 1888 he took charge of the railway and water departments of the U. S. Wind, Engine & Pump Company, Batavia, Ill. He held this position until 1898, when he was appointed manager of the western office in the railway department of the Otto Gas Engine Works, with headquarters at Chicago, which position he held until September, 1906, when he was elected president of the company. He held this position until 1911 when he organized and became president of the T. W. Snow Construction Company, Chicago, which position he has held until his death.

Harvey S. Patterson, manager of the railroad department of the Walworth Manufacturing Company, Boston, Mass., died on April 6 at the Norfolk county hospital, Mass., at the age of 38.

Leigh Best, senior vice-president at New York of the American Locomotive Company, who had been connected with the company since its organization in 1901, died on April 27 in Roosevelt Hospital, New York, following a surgical operation.

Herbert J. Desson, manager of the Detroit, Mich. office of the Blaw-Knox Company, died, after a brief illness, on April 16, at the age of 44. Mr. Desson was born in Cleveland and received his general education in the public schools of that city. He went with the Blaw-Knox Company in 1916 and three years later was placed in charge of the company's Detroit branch.

TRAIN No. 5, the Pennsylvania Limited, of the Pennsylvania Railroad, beginning with April 27, now runs from New York to Chicago in one hour less time than heretofore; leave New York 12:05 p. m. Eastern time, arrive at Chicago 9 a. m. Central time. The train has a sleeping car from New York to Detroit.



T. W. Snow

Railway Construction

ALGOMA CENTRAL.—This company is building a one-mile cut-off at its milepost No. 103 in Northwestern Ontario to allow the abandonment of two wooden trestles. The short cut-off is being blasted through rock and will cost approximately \$125,000.

ALTON & SOUTHERN.—This company contemplates the construction of an extension from the present eastern terminus to Mitchell, Ill.

AMERICAN REFRIGERATOR TRANSIT COMPANY.—This company is calling for bids for the construction of an ice manufacturing plant at Grand Junction, Colo., to cost approximately \$250,000.

ANN ARBOR.—This company is reported to be planning the construction of a branch line from near Durand, Mich., to Flint, a distance of 16 miles.

ATCHISON, TOPEKA & SANTA FE.—This company has been granted authority by the Railroad Commission of California to construct, jointly with the Los Angeles & Salt Lake, the city of Los Angeles and the county of Los Angeles, a viaduct to cross the Los Angeles river and the railway tracks adjacent to the river at Ninth street in the city of Los Angeles, Cal. The cost of the viaduct is to be divided equally among the four parties interested. The construction of similar viaducts at Macy, Aliso, First, Fourth and Seventh streets, Los Angeles, is also planned.

CENTRAL OF GEORGIA.—This company has awarded a contract to George B. Swift Company, Chicago, for the construction of car shops at Savannah, Ga., reported in the *Railway Age* of January 19.

CHESAPEAKE & OHIO.—This company has awarded to the Chicago Bridge & Iron Works a contract for the furnishing and erection of a 50,000 gal., conical bottom, all-steel tank on an 18-ft. tower at Skelton, W. Va.

CHICAGO, BURLINGTON & QUINCY.—This company plans the construction of a number of team tracks near the Union Depot in Denver, Colo. This will necessitate the removal of the Colorado & Southern coach yards to East Denver.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—This company plans the construction of an addition to its shops at Beech Grove, Ind., at an estimated cost of \$32,000. Bids will be called for in the near future.

DELAWARE, LACKAWANNA & WESTERN.—This company has awarded a contract to F. M. Talbot, New York, for the construction of an overhead highway viaduct at Mountain View, N. J., to cost approximately \$100,000. A contract has been awarded to F. D. Hyde, New York, for the construction of a mail building at Hoboken, N. J., to cost \$50,000 and to the Stillman-Delehanty-Ferris Company for the construction of a building at Hoboken to be used by the Pullman Company to cost \$55,000.

LEHIGH & NEW ENGLAND.—This company is making active progress in awarding contracts in connection with its Tamaqua, Pa., engine terminal and yards. As announced some time ago, contract for grading and yard tracks was awarded to the H. Denburger Construction Company, Bethlehem, Pa., and this part of the work is now about 85 per cent completed. A contract has been awarded to F. H. Clement & Company, Bethlehem, for construction of a 10-stall roundhouse, 90 ft. deep, of brick and concrete; 18-ft. by 30-ft. oil house of brick and reinforced concrete with tanks and pumps; 31-ft. by 45-ft. boiler house of brick and concrete for two 150-hp. keeler boilers with brick stack 100 ft. high, and 16-ft. by 16-ft. transformer house. A contract has also been awarded to Fairbanks, Morse & Company for a 200-ton reinforced concrete coal pocket to accommodate anthracite and bituminous coal. A Bethlehem 85-ft. twin-span turntable, concrete foundation, and a 50,000-gal. cypress tank on a steel stool with a 10-in. Mansfield water column are being installed and a Robertson ash-pit and hoist has been ordered. In addition to the foregoing items, a car inspection and repair building, 30 ft. by



A Russian Passenger Train

65 ft., and an office building for terminal officers and employees, with a crew room and locker room, will be built. It is expected that these new facilities will be completed this year. The total estimated cost of the work is \$600,000.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—This company is reported to be planning the construction of passenger stations at Lexington, Tenn., and Smyrna.

PORTLAND TERMINAL.—This company has awarded a contract to the Chicago Bridge & Iron Works for the furnishing and erection of a 50,000-gal. all-steel tank at Portland, Me.

READING.—This company has awarded a contract to the Curtiss-Grindrod Company for the construction of a metal-covered machine shop at St. Clair, Pa.

READING.—This company has undertaken extensive improvements at its South street ferryhouse, Philadelphia, including the placing in service of an additional ferry slip, the enlargement of the present ferry house, the construction of an overhead bridge across Delaware avenue, an escalator and a stairway connecting the South street station of the Philadelphia Rapid Transit's elevated line with the Reading's ferry house. The escalator will be 4 ft. wide, the stairway 6 ft. wide and the bridge 18 ft. wide. They will be built of steel to be furnished by the Belmont Iron Works. The construction will be done by company forces.

SOUTHERN.—This company will construct additional trackage at ten points on its lines between St. Louis and Danville, Ky. New yard tracks, aggregating a mile and a quarter in length, will be constructed at Huntingburg, Ind., and passing tracks will be extended at Dix, Walnut Hill, Golden Gate, and Maud, Ill., Woods, Riceville, and Lincoln City, Ind., Clarks and Harrodsburg, Ky. The extensions, varying from 600 to 2,000 ft., will provide a uniform system of passing tracks, capable of handling trains with 60 cars west of Huntingburg and trains of 45 cars east of that point. These projects complete the program started with the construction of new passing tracks at Centralia and Mt. Vernon, Ill., recently completed. In addition to the track improvements, work is also now well under way on improved shop facilities at Princeton, Ind., including a new tool room for the machine shop, extension of what is now the carpenter shop to make an efficient boiler shop, and construction of a complete new planing mill with the necessary machinery.

SOUTHERN PACIFIC.—This company, reported in the *Railway Age* of April 12 as calling for bids for the construction of an additional 15 miles of the Natron cut-off from Oakridge, Ore., to Summit, has awarded a contract to Henry & McFee, Seattle, Wash., for the construction of six miles of the line and to Erickson-Peterson-Grier, San Francisco, Cal., for the construction of nine miles of the line.

SOUTHERN PACIFIC.—This company, jointly with the Union Pacific, plans the construction of approximately 11 miles of track within the city limits of Los Angeles, Cal. The new track, which will permit the joint use of the Arcade station by the two roads, will connect the Union Pacific at a point on the Los Angeles river bank with the Southern Pacific freight yard along San Fernando road.

ST. LOUIS SOUTHWESTERN.—This company, jointly with the Illinois Central, has awarded a contract to the Railroad Water & Coal Handling Company, Chicago, for the construction of a pumping station and the laying of a pipe line near Madisonville, Ky. This company has also awarded a contract to the Railroad Water & Coal Handling Company for the construction of sand handling facilities and cinder pits at Dubuque, Iowa.

TEMISKAMING & NORTHERN ONTARIO.—This company has awarded a contract to Grant Brothers, Ottawa, Ont., for the construction of a line, to be known as the Lorrain branch, in Northern Ontario.

TEN NEW steel car floats have just been put in service by the Pennsylvania Railroad in New York Harbor. They were built by the New York Shipbuilding Corporation, Camden, N. J., at a cost of \$700,000. They are 250 ft. long and 34 ft. wide, with a capacity of ten freight cars, carried on two parallel tracks. The Pennsylvania's floating operations in New York Harbor make use of 74 floats and 19 tugboats.

Railway Financial News

ALABAMA & VICKSBURG.—*Bonds Sold.*—Spencer Trask & Co., White, Weld & Co., New York, and Canal-Commercial Trust & Savings Bank, New Orleans, have sold at 97 and interest, to yield over 5.15 per cent, \$2,500,000 first mortgage gold bonds, series "A"—5 per cent.

ALTON & SOUTHERN.—*Stock Issue.*—This company has applied to the Interstate Commerce Commission for authority to issue \$2,490,000 of common stock, of which \$1,658,800 is to be delivered to the Aluminum Company of America at par in discharge of obligations amounting to \$1,656,787 and \$833,200 is to be sold at par for cash to reimburse the treasury.

ATCHISON, TOPEKA & SANTA FE.—*Annual Report.*—This company's annual report for 1923 is reviewed in an article on another page of this issue entitled "Santa Fe Earns Five Times Interest Charges." See also excerpts from annual report on adjacent pages.

CHESAPEAKE & OHIO.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to pledge as security for a note of \$9,200,000 to the director general of railroads \$487,000 of general mortgage 4½ per cent bonds and \$12,896,000 of first lien and improvement 20-year 5 per cent mortgage bonds heretofore nominally issued.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—*Interest on Bonds Reduced.*—Because of changed market conditions the Interstate Commerce Commission has issued a supplemental order authorizing, as to the issue of \$20,000,000 of refunding and improvement mortgage bonds previously authorized, a reduction in the interest from 5½ to 5 per cent, in the redemption price from 107½ to 105, and an extension of the maturity date to July 1, 1963, instead of 1948. The company represented that bonds bearing a lower rate of interest and having a longer maturity, can now be sold to better advantage. Negotiations have been had with J. P. Morgan & Co., and it is expected that the bonds will be sold at a net price of not less than 90 and interest.

COLORADO, WYOMING & EASTERN.—*New Company.*—See Northern Colorado & Eastern.

ERIE.—*Executive Committee.*—Myron C. Taylor, recently elected a director, has been placed on the executive committee.

DETROIT & MACKINAC.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a deficit of \$81,127 as compared with a deficit of \$184,355 in 1922. The income account compares as follows:

	1923	1922
Freight revenue	\$1,418,984	\$1,357,364
Passenger revenue	344,773	353,056
Total operating revenues	1,924,863	1,868,154
Maintenance of way and structures	374,870	311,980
Maintenance of equipment	573,800	585,402
Traffic	24,057	25,872
Transportation	729,615	709,181
General	69,880	70,091
Total operating expenses	1,770,723	1,701,323
Net operating revenue	154,139	166,832
Railway tax accruals	100,535	120,666
Railway operating income	52,487	45,755
Total income	176,193	54,332
Surplus	Def. 81,127	Def. 184,355

DULUTH, SOUTH SHORE & ATLANTIC.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net deficit of \$180,496 as compared with a net deficit of \$727,210 in 1922. The income account compares as follows:

	1923	1922
Freight revenue	\$3,643,543	\$2,733,742
Passenger revenue	1,210,970	1,083,944
Total operating revenue	5,861,203	4,495,812
Maintenance of way and structures	827,019	729,395
Maintenance of equipment	899,411	688,551
Traffic	79,325	80,715
Transportation	2,679,663	2,264,069
General	141,943	135,079
Total operating expenses	4,694,926	3,961,793
Net operating revenue	1,166,277	534,019
Railway tax accruals	347,636	383,619
Gross income	914,679	206,620
Total deductions from gross income	1,095,175	933,830
Net deficit	180,496	727,210

(Continued on page 1121)

Annual Reports

The Atchison, Topeka & Santa Fe Railway Co.—Twenty-ninth Annual Report

APRIL 1, 1924.

To the Stockholders:

Your Directors submit the following report for the fiscal year January 1, 1923, to December 31, 1923, inclusive.

The lines comprising the Atchison System, the operations of which are embraced in this report, and the mileage in operation at the end of the year as compared with the previous year, are as follows:

	December 31, 1923.	December 31, 1922.
Atchison, Topeka & Santa Fe Railway	8,931.17 miles	8,864.02 miles
Gulf, Colorado & Santa Fe Railway	1,908.89 "	1,908.89 "
Panhandle & Santa Fe Railway	853.18 "	852.48 "
Grand Canyon Railway	64.09 "	64.09 "
*Rio Grande, El Paso & Santa Fe Railroad	20.22 "	
	11,757.33 "	11,709.70 "

*Operated by Atchison, Topeka & Santa Fe Railway under lease effective January 1, 1923.

Increase during the year 47.63 miles.

The average mileage operated during the fiscal year ending December 31, 1923, was 11,782.15, being an increase of 81.27 miles as compared with the average mileage operated during the preceding fiscal year.

The Company is also interested jointly through ownership of stocks and bonds, in other lines aggregating 567.88 miles, namely Northwestern Pacific Railroad 517.78 miles and Sunset Railway 50.10 miles.

INCOME AND PROFIT AND LOSS STATEMENT.

The following is a summary of the transactions of the System for the years ending December 31, 1922 and 1923:

	1922.	1923.
Operating Revenues	\$225,124,544.37	\$238,683,735.50
Operating Expenses	166,904,377.95	173,076,268.03
Net Operating Revenue	\$58,220,166.42	\$65,607,467.47
Railway Tax Accruals	18,395,511.61	20,316,490.82
Uncollectible Railway Revenues	68,692.50	112,187.29
Equipment and Joint Facility Rents	247,439.71	1,183,482.43
Net Railway Operating Income	\$40,003,402.02	\$46,362,271.79
Other Income	6,723,386.72	7,504,269.25
Gross Income	\$46,726,788.74	\$53,866,541.04
Miscellaneous Tax Accruals	46,508.20	54,479.76
Rent for Leased Roads and Other Charges	426,654.76	400,516.82
Interest on Bonds, including accrued interest on Adjustment Bonds	11,871,255.06	11,323,743.12
Net Corporate Income (representing amount available for dividends and surplus)	\$34,382,370.72	\$42,087,801.34

From the net corporate income for the year the following sums have been deducted:

DIVIDENDS ON PREFERRED STOCK—	
No. 50 (2 1/4%) paid Aug. 1, 1923	\$3,104,342.50
No. 51 (2 1/4%) paid Feb. 1, 1924	3,104,342.50

DIVIDENDS ON COMMON STOCK—	
No. 72 (1 1/2%) paid June 1, 1923	\$3,450,412.50
No. 73 (1 1/2%) paid Sept. 1, 1923	3,486,277.50
No. 74 (1 1/2%) paid Dec. 1, 1923	3,486,277.50
No. 75 (1 1/2%) paid Mar. 1, 1924	3,486,277.50

	13,909,245.00
California-Arizona Lines Bonds Sinking Fund	17,896.20
S. F. & S. J. V. Ry. Co. Bonds Sinking Fund	26,897.14
	20,162,723.34

Surplus carried to Profit and Loss	\$21,925,078.00
Surplus to credit of Profit and Loss, December 31, 1922	\$141,534,082.33
Transfer of "Reserve for Fuel Lands" to unappropriated surplus	2,329,373.43
Surplus appropriated for investment in physical property	\$253,700.88
Sundry Adjustments	385,654.19
	639,355.07
	143,224,100.69

Surplus to credit of Profit and Loss December 31, 1923.... \$165,149,178.69

"Other Income" consists of interest accrued and dividends received on securities owned, including United States Government securities, interest on bank balances, rents from lease of road and other property, and other miscellaneous receipts.

CAPITAL EXPENDITURES AND REDUCTION OF BOOK VALUES.

The total charges to Capital Account, as shown by the General Balance Sheet, page 24, at December 31, 1923, aggregated \$937,015,525.59 as com-

pared with \$896,197,417.32 at December 31, 1922, an increase during the year of \$40,818,108.27, which analyzes as follows:

Construction and acquisition of new mileage, including the acquisition of bonds and stocks of other railway companies:

Atchison, Topeka & Santa Fe Ry.	\$44,178.86
Buffalo Northwestern R. R.	10,000.00
Dodge City & Cimarron Valley Ry.	99,845.80
Eldorado & Santa Fe Ry.	2,704,839.31
Gulf, Beaumont & Kansas City Ry.	450.00
Oklahoma Central R. R.	1,582.98
Osage County & Santa Fe Ry.	415,144.12
Santa Fe & Los Angeles Harbor Ry.	1,437,111.12
Tulsa & Santa Fe Ry.	16,457.37
	\$4,729,609.56

Additions and Betterments:

Fixed Property	\$20,360,309.08
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Equipment—	
Railroad Companies—Cr.	1,524,137.64
Santa Fe Land Improvement Co.	25,839,861.86

Betterments to Equipment—	
Railroad Companies	764,826.08
Santa Fe Land Improvement Co.	291,114.19

45,731,973.57

Investments in Terminal and Collateral Companies:

Beaumont Wharf & Terminal Co.—Cr.	\$4,174.30
Denver Union Terminal Ry. Co.	1,985.27
Kansas City Terminal Ry. Co.	39,370.95
Northwestern Pacific R. R. Co.—Cr.	4,750.00
Pacific Land Improvement Co.—Cr.	47,000.00
Pueblo Union Depot & R. R. Co.	5,502.89
St. Joseph Terminal R. R. Co.	512.34
St. Joseph Union Depot Co.—Cr.	500.00
Santa Fe Land Improvement Co.	1,028,235.07
Southwestern Lumber Co. of New Jersey—Cr.	350,000.00
Sunset Ry. Co.—Cr.	12,000.00
Terminal Building Corporation of Dallas	68,684.95
Toluca Mining Co.	60,000.00
Union Passenger Depot Co. of Galveston	10,540.64
	676,407.81

Miscellaneous Physical Property	299,157.48
Other Investments, including Sinking Fund—Cr.	8,973.30
Miscellaneous items	46,830.00

\$51,475,005.12

Less: Net decrease in investment in obligations of the United States	10,656,896.85
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Net increase in Capital Account during the year..... \$40,818,108.27

COMPARISON OF OPERATING RESULTS.

The following is a statement of revenues and expenses of the System for the year ending December 31, 1923, in comparison with the previous year:

Year Ending Dec. 31, 1923.	Year Ending Dec. 31, 1922.	Increase or Decrease
OPERATING REVENUES:		
Freight	\$166,332,196.07	\$158,026,370.21
Passenger	52,918,569.71	48,644,528.72
Mail, Express and Miscellaneous	19,432,969.72	18,453,645.44
Total Operating Revenues	\$238,683,735.50	\$225,124,544.37
OPERATING EXPENSES:		
Maintenance of Way and Structures	\$33,621,545.80	\$36,183,241.12
Maintenance of Equipment	57,605,366.95	51,069,933.12
Traffic	4,216,341.52	3,900,057.01
Transportation—Rail Line	73,590,673.87	71,122,569.99
Miscellaneous Operations	77,472.43	180,003.80
General	5,036,334.77	5,003,917.67
Transportation for Investment—Cr.	1,071,467.31	555,344.76
Total Operating Expenses	\$173,076,268.03	\$166,904,377.95
Net Operating Revenue	\$65,607,467.47	\$58,220,166.42
Railway Tax Accruals	20,316,490.82	18,395,511.61
Uncollectible Railway Revenues	112,187.29	68,692.50
Railway Operating Income	\$45,178,789.36	\$39,755,962.31
Equipment Rents—Net—Cr.	1,760,908.65	892,713.25
Joint Facility Rents—Net—Dr.	577,426.22	645,273.54
Net Railway Operating Income	\$46,362,271.79	\$40,003,402.02

The following averages for 1923 compare with 1922.

The average tons of freight (revenue and company) per loaded car mile decreased from 21.51 to 21.31 or .93 per cent.

The average tons of freight (revenue and company) carried per freight-train mile (freight and mixed) increased from 582.23 to 587.63 or .93 per cent.

The average freight revenue per freight-train mile decreased from \$7.09 to \$6.86, or 3.24 per cent.

The average passenger revenue per passenger-train mile increased from \$2.18 to \$2.25, or 3.21 per cent.

The average passenger-train revenue per passenger-train mile increased from \$2.82 to \$2.90, or 2.84 per cent.

The tons of freight carried one mile (revenue and company, but excluding water ton miles) increased 1,277,495,520 or 9.85 per cent., while miles run by freight cars (loaded and empty) in freight and mixed trains increased 122,539,890, or 13.62 per cent., and the mileage of such trains increased 1,969,141, or 8.84 per cent.

The number of passengers carried one mile increased 140,828,084, or 9.56 per cent., while miles run by passenger-train cars (excluding work) in passenger and mixed trains increased 10,672,909, or 6.41 per cent., and the mileage of such trains increased 1,154,366, or 5.17 per cent.

CAPITAL STOCK AND FUNDED DEBT.

The outstanding Capital Stock on December 31, 1922, consisted of:

Common	\$227,052,500.00
Preferred	124,173,700.00

\$351,226,200.00

Issued during the year:

Common Stock issued in exchange for Convertible Bonds retired	5,366,000.00
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Capital Stock outstanding December 31, 1923:

Common	\$232,418,500.00
Preferred	124,173,700.00

\$356,592,200.00

The number of holders of the Company's capital stock at the close of the last five years and the changes in number from year to year were as follows:

COMMON.		PREFERRED.	
Number.	Increase for Year.	Number.	Increase for Year.
1919	31,281	19,643	894
1920	36,469	5,188	21,367
1921	39,614	3,145	22,065
1922	41,845	2,231	22,798
1923	43,508	1,663	23,610

The outstanding Funded Debt of the System amounted, on December 31, 1922, to \$287,722,593.60

The following changes in the Funded Debt occurred during the year:

Obligations retired:

Convertible 4% Bonds	\$5,366,000.00
S. F. & S. J. V. Ry. Co. First Mortgage 5% Bonds	22,000.00
Equipment Trust 6% Notes	6,375,200.00
Miscellaneous Bonds	490.00

\$11,763,690.00

Obligations Issued:

California-Arizona Lines First and Refunding Mortgage 4 1/2% Bonds	80.10
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Decrease of Funded Debt

11,763,609.90

Total System Funded Debt outstanding December 31, 1923.. \$275,958,983.70

TREASURY.

Neither this Company nor any of its auxiliaries has any notes or bills outstanding.

The Company held in its treasury on December 31, 1923, \$28,036,785.87 cash. In addition, the Company owns \$31,369,400.00 of United States Government securities, which are carried at cost of \$31,473,365.15 in the general balance sheet.

FUEL RESERVE FUND.

The maintenance of this fund having been rendered unnecessary through the accrual of adequate depreciation and depletion reserves by subsidiary coal and oil companies, it was discontinued during the year and the balance therein transferred to the general funds of the Company. The corresponding balance of appropriations of surplus creating the fund, heretofore carried in the general balance sheet as "Reserve for Fuel Lands," was also transferred from that account and merged with the unappropriated surplus in the Profit and Loss Account.

CONSTRUCTION OF NEW LINES.

The present status of new lines under construction is as follows:

ELDORADO AND SANTA FE RAILWAY.

The construction of this road, which constitutes a low grade cut-off line 13.65 miles shorter than the present line, extending from Ellinor, Chase County, Kansas, to the southerly limits of Eldorado, Butler County, Kansas, a distance of 50.4 miles, has progressed during the year and the work is now substantially completed. The line will be placed in service this Spring.

OSAGE COUNTY AND SANTA FE RAILWAY.

The part of this line extending from Owen to Pawhuska, Oklahoma, a distance of 35.2 miles, was completed and placed in service on August 13, 1923.

SANTA FE AND LOS ANGELES HARBOR RAILWAY.

This line, 12.54 miles in length, extending from a point on the Redondo Branch near El Segundo, Los Angeles County, California, to the City of Wilmington at Los Angeles harbor, will be completed early in 1924 to a point of connection with certain municipally owned trackage over which your Company is to have rights in reaching the harbor proper. It is expected that full harbor service can be rendered through the municipal tracks in the very near future.

ADDITIONAL MAIN TRACK MILEAGE.

The mileage of second track in operation at December 31, 1923, was 1,491.86 miles, with additional track authorized as follows:

Sewanee to McCarty's, New Mexico	33.8 miles
Horace to Baca, New Mexico	24.4 "
Hicks to Summit, California	43.7 "

101.9 "

When this work is completed the second main track in operation will approximate 1,600 miles, and with the two main lines now in operation between Newton and Dalies near Albuquerque, and between San Bernardino and Los Angeles, will give either a double track or two lines, with the exception of about 120 miles, for the entire distance from Chicago to Los Angeles.

[ADVERTISEMENT]

GUARANTY UNDER TRANSPORTATION ACT, 1920.

The status of your Company's claim under the provisions of Section 209 of the Transportation Act, 1920, is substantially the same as stated in the last annual report. Final settlement has been deferred pending audit of the accounts of the guaranty period by the field forces of the Interstate Commerce Commission. This audit is now practically completed and it should be possible therefore to effect a final settlement in the near future.

TAXES.

Federal, State and Local tax accruals for the year 1923 aggregate \$20,316,490.82, and show an increase over the year 1922 of \$1,920,979.21. A comparison for the two years of Federal tax accruals and of State and Local accruals is presented in the following table:

FEDERAL TAXES:	1923.	1922.	INCREASE.
Income and War	\$9,112,560.99	\$7,252,124.15	\$1,860,436.84
Capital Stock	403,595.50	544,406.50	-140,811.00
Stamp and License	4,824.13	2,285.17	2,538.96
Total Federal	\$9,520,980.62	\$7,798,815.82	\$1,722,164.80
State and Local	10,795,510.20	10,596,695.79	198,814.41
Grand Total	\$20,316,490.82	\$18,395,511.61	\$1,920,979.21

GENERAL.

The year 1923 was somewhat of a revelation to the public as to what can be done in handling traffic and was most gratifying to the railroads. They were called upon to move the largest volume of traffic in their history. This was accomplished with promptness and without car shortage, delay or congestion.

Early in the year the railroads adopted a program for improved facilities, additional equipment, reduction in number of bad order locomotives and cars, increased car and train loading, and greater car miles per day, which was made a success through the loyal service of employees and by the hearty co-operation of shippers. This result was made financially possible by the greater confidence of investors in railroad securities attributable to the gradual improvement in earnings and to the fundamental soundness of the Transportation Act under which the railroads have been operating since March 1, 1920. Railroad earnings have shown constant improvement, being 3.33 per cent. for the year 1921 upon the value of their transportation property as found by the Interstate Commerce Commission, 4.14 per cent. for 1922, and 5.1 per cent. for 1923. A program for improvement of the general railroad plant similar to that of 1923 is being continued in the present year. For the health of all of our great industries and for the prosperity of the country as a whole it is most desirable that there shall be no adverse legislation to handicap the railroads in this program upon which they have already entered, although it is discouraging to say the least that up to the end of February, 1924, over 200 bills, practically all adversely affecting railroads, had been introduced in Congress.

As its part of the 1924 program your Company is getting 5,700 new freight cars, 50 express refrigerators, 78 passenger cars, and 57 locomotives, aggregating in cost about \$24,000,000, and is planning for 102 miles of second track on its transcontinental main line. Other important items on its budget are a new double track bridge over the Mississippi River at Fort Madison, Iowa, a new bridge over the Canadian River at Canadian, Texas, a new general office building at Topeka, automatic train control in Illinois as required by the Interstate Commerce Commission, extensive enlargement of shop facilities at Emporia, Kansas, and San Bernardino, California. The total capital expenditure program is roughly \$81,000,000, of which probably about \$55,000,000 will be spent during the current year, or approximately the same amount as during the past year.

On June 13, 1922, the Interstate Commerce Commission issued an order requiring each of 49 railroads to install automatic train control on one passenger division. Pursuant to this order the Company has been engaged in equipping its line and locomotives from Chicago to Fort Madison, 233 miles, with what is known as the Continuous Control System. This gives the engineer continuous indication of any conditions which affect the movement of his train and in addition automatically stops the train if the engineer disregards the signals. It is hoped that the risk of collision will be practically eliminated. The cost of this work is estimated at \$2,000,000 and under the Commission's order must be completed by January 1, 1925. A supplemental order was issued by the Commission on January 14, 1924, requiring the Company to equip by February 1, 1926, an additional passenger engine division, but it is hoped that permission may be obtained from the Commission to hold such further work in abeyance until the present installation has been tried out.

During the year 1923 the Company paid out in pensions to its retired employees \$271,824.75, there being 731 pensioners on its rolls at December 31, 1923. Since the establishment of the pension system in 1907, a total of 1,264 employees have been retired under its provisions and the sum of \$1,940,576.12 has been paid in pensions. The pensioners have an average service of 29 years with the Company. During 1923 death benefits were paid in 295 cases, amounting to \$338,869.58. The death benefit plan has been in effect since July 1, 1916, and under it payments have been made in 1,855 cases, aggregating \$1,704,936.79. The average length of service of all cases in which death benefits have been paid is 14 years, the average for cases paid in 1923 being 16 years.

A comparison of earnings and expenses with pre-war days will be of interest to the stockholders. The amounts paid to the Company for equivalent services performed by it in the two years shown below will illustrate the situation:

	1915.	1923.
Freight service	\$1.00	\$1.39
Passenger service	1.00	1.58
Freight and passenger service combined	1.00	1.44

The amounts paid by the Company for equivalent quantities and services in the two years are as follows:

	1915.	1923.
Fuel	\$1.00	\$2.03
Material and supplies	1.00	1.92
Hours of labor	1.00	2.15
Taxes	1.00	3.69

Aggregating all operating expenses, exclusive of depreciation, it cost \$2.08 for the same number of hours of work and the same quantity of fuel and materials and supplies that would have cost \$1.00 in 1915.

The earnings shown by the Company in the face of these figures have been made possible only by the large increase in business approximating 49 per cent. in tons one mile and 20 per cent. in passengers one mile coupled with expenditures for new equipment and increased and improved facilities, approximating \$195,000,000. These improvements have enabled the Company to handle the increased traffic more efficiently and economically through larger train loads, improved fuel consumption, and other similar ways.

Your Directors take pleasure in again expressing their appreciation of faithful and efficient service rendered by officers and employees.

W. B. STOREY,
President.

Seaboard Air Line Railway Company

REPORT OF THE DIRECTORS

For the Fiscal Year Ended December 31, 1923.

BALTIMORE, Md., April 10, 1924.

To the Stockholders and Security Owners of the Seaboard Air Line Railway Company:

The President and Board of Directors submit the following report of the affairs of the Company for the year ended December 31, 1923:

INCOME ACCOUNT

FOR THE YEAR ENDED DECEMBER 31, 1923, COMPARED WITH
YEAR ENDED DECEMBER 31, 1922.

	1923	1922	Increase
Railway Operating Revenues	\$52,249,110.36	\$45,679,048.19	\$6,570,062.17
Railway Operating Expenses	40,342,259.48	36,222,884.20	4,119,375.28
Net Revenue from Railway Opticians	\$11,906,850.88	\$9,456,163.99	\$2,450,686.89
Railway Tax Accruals	2,204,054.28	2,124,235.32	79,818.96
Uncollectible Railway Revenues	12,314.20	3,776.11	8,538.09
Railway Operating Income	\$9,690,482.40	\$7,328,152.56	\$2,362,329.84
Equipment Rents—Dr.	1,644,548.31	2,991,974.66	*1,347,426.35
Joint Facility Rents—Dr.	87,970.68	105,608.95	*17,638.27
Net Railway Operating Income	\$7,957,963.41	\$4,230,568.95	\$3,727,394.46
Other Income	516,756.60	489,074.06	27,682.54
Gross Income	\$8,474,720.01	\$4,719,643.01	\$3,755,077.00
Rents and Other Charges	107,095.10	105,973.03	1,122.07
Applicable to Interest	\$8,367,624.91	\$4,613,669.98	\$3,753,954.93
Fixed Interest Charges	6,095,245.36	5,616,286.93	478,958.43
Annual Allotment of Discount on Securities	252,938.81	155,613.13	97,325.68
Interest Adjustment Mortgage (Income) Bonds	625,000.00	.....	625,000.00
Net Income	\$1,394,440.74	Dr. \$1,158,230.08	\$2,552,670.82

*Decrease.

FUNDED DEBT.

The President, by authority and direction of the Board of Directors, negotiated a loan of \$6,759,000 with the United States Government under the provisions of Section 210 of the Transportation Act, 1920, to provide funds for the retirement of \$3,000,000, Florida Central and Peninsular Railroad Company First Mortgage Bonds maturing July 1, 1923; \$1,000,000 Secured Gold Notes of the Company maturing September 15, 1923; for the retirement of other obligations, and for additions and betterments. Accordingly the Company issued and delivered to the Secretary of the Treasury of the United States secured notes maturing ten years after date, bearing interest at the rate of Six Per Cent. (6%) per annum, payable semi-annually, as follows:

Dated May 21, 1923.....	\$1,259,000
Dated June 30, 1923.....	3,000,000
Dated August 1, 1923.....	300,000
Dated September 14, 1923.....	1,000,000
Dated October 1, 1923.....	450,000
Dated November 1, 1923.....	350,000
Dated December 1, 1923.....	400,000
Total	\$6,759,000

During the year \$4,028,000 First and Consolidated Mortgage, Series "A," Six Per Cent. (6%) Bonds, due 1945, were delivered to the Company by the Trustee of the First and Consolidated Mortgage in reimbursement of expenditures for additions, betterments and equipment pursuant to the provisions of said Mortgage. These bonds were used by the Company as part of the collateral to secure the loans received from the United States under Section 210 of the Transportation Act.

During the year the 1920 allotment of \$2,750,000 Refunding Mortgage Four Per Cent. (4%) Gold Bonds, due 1959, were delivered to the Company by the Trustee of the Refunding Mortgage in respect of expenditures for additions, betterments and property, pursuant to the provisions of said Mortgage. These bonds were pledged under the Company's First and Consolidated Mortgage, as therein provided.

In April, 1923, Equipment Trust Agreement Series "V," Philadelphia Plan, was entered into with The Chase National Bank of the City of New York as Trustee, under which there was issued \$6,600,000 principal amount of Six Per Cent. (6%) equipment trust certificates payable in twenty-four semi-annual installments of \$275,000 each, on the first day of October and the first day of April in each year, commencing October 1, 1923, and ending April 1, 1935.

The equipment acquired under Trust "V," most of which was reported in last year's annual report as contracted for, is hereinafter enumerated.

Since the close of the year Equipment Trust Agreement Series "W," dated December 15, 1923, has been entered into with The Chase National Bank of the City of New York, as Trustee. There is to be issued thereunder \$1,620,000 principal amount of Six Per Cent. (6%) equipment trust certificates. The equipment to be acquired under this trust is hereinafter enumerated.

\$3,000,000 Florida Central and Peninsular Railroad Company First Mortgage "Extended" Bonds, maturing July 1, 1923, were acquired by the Company; these bonds remain uncancelled and have been pledged under the Refunding Mortgage, as required thereunder, and a like face amount of Refunding Mortgage Four Per Cent. (4%) Gold Bonds, due 1959, were delivered to the Company in 1924. These \$3,000,000 Refunding Bonds have been pledged under the Company's First and Consolidated Mortgage, Series "A" Six Per Cent. Bonds, due 1945, which were used as collateral to secure loans received from the United States under Section 210 of the Transportation Act, 1920.

There were paid and retired during the year \$1,000,000 face amount of Seaboard Air Line Railway Company Three Year Extended Gold Notes, maturing September 15, 1923.

Equipment Trust Certificates aggregating \$1,476,000 were paid off and acquired during the year. The certificates are uncancelled and have been or may be pledged under the First and Consolidated Mortgage against the drawing down of First and Consolidated Bonds.

EQUIPMENT.

Equipment Trust Series "V" provides for the following equipment:

20 new Mikado type freight locomotives,
4 new all steel combination mail and baggage cars,
1000 new 80,000 lb. capacity steel upperframe and underframe, steel end
ventilated box cars,
1000 new 100,000 lb. capacity steel upperframe and underframe, low side
gondola cars.

25 new steel underframe caboose cars,
1100 rebuilt steel upperframe and underframe ventilated box cars,
500 rebuilt steel center sill, reinforced ends, ventilated box cars,
400 rebuilt steel underframe hopper bottom gondola cars,

Of the above equipment, and other equipment reported in last year's report as contracted for and undelivered, the following was received and put into service during the year:

23 new Mikado type freight locomotives,
1 new steel dining car,
1726 new 80,000 lb. capacity steel upperframe and underframe, steel end
ventilated box cars,
1000 new 100,000 lb. capacity steel upperframe and underframe, low side
gondola cars,
25 new steel underframe caboose cars,
1178 rebuilt steel upperframe and underframe ventilated box cars,
1539 rebuilt steel center sill, reinforced ends, box cars,
400 rebuilt steel underframe hopper bottom gondola cars,
245 rebuilt wood upperframe and steel underframe box cars,
1533 rebuilt drop bottom gondola cars,
76 rebuilt all steel phosphate cars,

leaving equipment contracted for but undelivered as follows:

4 new all steel combination mail and baggage cars,
225 rebuilt steel upperframe and underframe ventilated box cars,
56 rebuilt steel center sill, reinforced ends, box cars,

Since January 1, 1924, the following additional equipment to be acquired under Equipment Trust Series "W" has been contracted for delivery as early as possible during the current year, to-wit:

4 new all steel combination mail and baggage cars,
2 new all steel dining cars,
1 new all steel business car,
25 new steel underframe caboose cars,
932 80,000 lb. capacity steel underframe flat cars, new except for re-built trucks,

588 rebuilt freight cars,

At the close of the year only 15.5 per cent. of the Company's locomotives were awaiting repairs, 10.8 per cent. being in need of heavy repairs, the balance 4.7 per cent. requiring running repairs only.

At the close of the year only 4.91 per cent. of the freight cars owned by the Company, were on its line, in unserviceable condition, awaiting repairs.

The Company's rebuilding program, begun in 1922, involved the complete rehabilitation of 10,620 freight cars. It is anticipated that the entire program will be completed by the summer of 1924. As of the close of the year 8,819 had been rebuilt and put into service, leaving a balance of 1,801 to be completed in the early part of 1924.

GENERAL REMARKS.

The freight car rebuilding program, put into effect by this Company during 1922, marked a new era in overcoming the delinquencies of Federal control during which Seaboard equipment suffered severely and as a result of which the railroad, upon return to its owners, faced a serious problem owing to the bad order equipment conditions. Equipment rehabilitation under the Company's policy, together with the purchase of certain new equipment, increased operating efficiency and enabled the Company to handle the large volume of freight business during the year which otherwise could not have been secured. The policy adopted placed the Company in position to handle additional traffic, both freight and passenger, and not only were the Company's gross earnings largely increased over the preceding year, but equipment per diem paid for foreign cars decreased \$1,347,426.35, although the equipment program had not been completed at the close of 1923.

Gross revenues increased \$6,570,062.17 over 1922. Freight revenue increased \$4,576,331.65, although a ten per cent. (10%) rate reduction became effective during the previous year. Passenger train revenue increased \$1,808,275.03, and other revenue from operations increased \$185,455.49. The number of revenue tons carried during 1923 was 14,995,016, an increase over the previous year of 2,615,920 tons, or 21 per cent. The number of tons of revenue freight carried one mile increased 17 per cent. and there was an equal increase in the number of revenue tons carried one mile per mile of road.

Operating expenses increased \$4,119,375.28, of which \$2,136,334.52 was in maintenance. Gross revenues increased \$6,570,062.17, while transportation expenses increased only \$1,650,341.89. The transportation ratio was 38.89 as against 40.86 for the previous year. The number of revenue tons per train increased 4 per cent. over the previous year. Train miles increased 10 per cent. and locomotive miles increased 11 per cent. and, as previously stated, equipment rents decreased \$1,347,426.35.

The negotiations for the settlement of the Company's claim against the United States Railroad Administration, growing out of Federal control, terminated during 1923. These negotiations had been carried on since 1920. Your management believed that the terms named by the Director General of Railroads at the beginning of these negotiations in 1920 were totally inadequate and not commensurate with the value of the property to the Government under the rental value the Director General then proposed, and would not compensate the Company for the damage done to its freight car equipment during Federal control. The freight car equipment of this Company was turned over to the Railroad Administration in 6.7% bad order and returned in approximately 40% bad order. Your management believed it was essential that sufficient time be given to prove the claims made in this respect and declined to press matters to a conclusion until sufficient time had been given to permit the freight cars in the ordinary course of business to be returned from other lines in order that their condition could be ascertained.

The rental or standard return for the Company's property was finally fixed at \$7,800,000 per annum for the period of Federal control, compared

with the figure \$6,504,428.76 originally certified for the standard rental. As a result of the fixing of this amount as standard rental, the Company received \$650,188.43 in final settlement with the Interstate Commerce Commission on account of the six months' guaranty period, and in reimbursement, under Section 209 of the Transportation Act, of the deficit from operations during that period. The balance of the amount for the guaranty period had been previously paid. The settlement of the guaranty period resulted in a charge to Profit and Loss due to abnormal maintenance which was necessary during the period immediately following Federal control.

In the final settlement with the Director General of Railroads \$750,000 was received in addition to the amount received from the Commission, the balance between the increased amount finally agreed upon as standard rental and the rental first certified, which had been paid by previous advances. Expenditures made by the Director General for additions and betterments to the Company's property during Federal control were funded in the amount of \$2,000,000, increasing the cash received by the Company in final settlement with the Government to \$3,400,188.43.

In this settlement all Federal control accounts against the Seaboard were discharged, including items of the book accounts between the Director General and the Company, which, on the basis of the so-called standard return indicated an apparent balance against the Seaboard amounting to approximately \$8,000,000, without computing interest or the Director General's claim for over-expenditures with respect to maintenance on the flat accounting basis, which the Company declined to accept.

While the settlement did not produce the amount which as a result of litigation, in the judgment of your management, would be recoverable, in view of the fact that your Company declined to accept the standard form of contract for the taking of the property under Federal control, a suit in the Court of Claims would have been requisite to establish full recovery. For this reason, in view of the substantial concessions by the Director General, regarded as reasonable from his standpoint, in view of the basis of settlement with other carriers, the settlement was agreed to. The result was a substantial credit to the Company's Profit and Loss Account.

On December 20, 1923, the Board of Directors declared and ordered paid on February 1, 1924, an installment of interest on the \$25,000,000 Adjustment.

TABLE NO. 2—GENERAL BALANCE SHEET, DECEMBER 31, 1923.

ASSETS.

INVESTMENTS:

Investment in Road and Equipment:

Road \$167,864,141.81
Equipment 37,590,539.17
General Expenditures 572,747.24

\$206,027,428.22

1,032.04

Sinking Funds
Deposits in Lieu of Mortgaged Property Sold
Miscellaneous Physical Property

1,024,205.67

835,943.63

Investments in Affiliated Companies:

Stocks—Pledged
Stocks—Unpledged
Bonds—Pledged
Bonds—Unpledged
Notes
Advances

3,088,654.31
299,639.22
916,158.45
407,551.78
741,905.12
4,266,945.82

9,720,854.70

Other Investments:

Stocks—Pledged
Stocks—Unpledged
Bonds—Pledged
Bonds—Unpledged
Notes
Advances

26.00
84,546.82
9,850.00
21,000.00
30,636.00
171,794.97

317,853.79

Total 217,927,318.05

CURRENT ASSETS:

Cash with Treasurer \$ 3,879,877.41

Cash in Transit 1,041,914.24

Special Deposits—Cash with Fiscal Agencies and Trustees
Loans and Bills Receivable
Traffic and Car Service Balances Receivable
Net Balances Receivable from Agents and Conductors
Miscellaneous Accounts Receivable:

Individuals and Companies
United States Government
Other Companies for Claims

Material and Supplies
Interest and Dividends Receivable
Rents Receivable
Other Current Assets
Total
DEFERRED ASSETS:

Working Fund Advances
Other Deferred Assets
Total
UNADJUSTED DEBITS:

Insurance Premiums Paid in Advance
Discount on Funded Debt
Claims in Suspense
Other Unadjusted Debits
Total
GRAND TOTAL

4,921,791.65

1,059,568.57

43,575.23

1,224,275.76

190,617.12

1,630,800.89

259,151.46

131,894.55

5,088,110.42

3,302.04

3,867.60

314,302.47

14,871,257.76

65,930.96

474,947.62

102,924.49

4,587,539.93

386,775.59

1,496,791.58

6,574,031.59

\$239,913,485.98

LIABILITIES.

CAPITAL STOCK:

Common Capital Stock Issued \$40,041,000.00
Less: Pledged as Collateral 3,021,600.00
Less: In Treasury 300.00 \$37,019,100.00

Preferred 4-2% Capital Stock

Issued 25,000,000.00
Less: Pledged as Collateral 1,105,900.00 23,894,100.00

Preferred 6% Capital Stock

Issued 2,273,100.00
Less: Pledged as Collateral 2,235,000.00
Less: In Treasury 800.00 37,300.00

Total \$60,950,500.00

FUNDED DEBT UNMATURED:

Equipment Obligations 26,628,687.47

Less: Pledged as Collateral 9,224,687.47
Less: In Treasury 66,000.00 27,338,000.00

Mortgage Bonds Proprietary

Companies 39,606,000.00
Less: Pledged as Collateral 5,947,000.00 33,659,000.00

S. A. L. Railway First Mort-

gage Bonds 39,775,000.00
Less: Pledged as Collateral 27,000,000.00 12,775,000.00

S. A. L. Railway Refunding

Mortgage Bonds 58,761,000.00
Less: Pledged as Collateral 39,411,000.00 19,350,000.00

S. A. L. Railway Company

First and Consolidated Mort-

gage Bonds, Series "A" 48,749,000.00
Less: Pledged as Collateral 20,838,500.00
Less: In Treasury 133,000.00 27,777,500.00

Income Bonds:

S. A. L. Railway Adjustment Mortgage Bonds 25,000,000.00

Miscellaneous Obligations:
Secretary of Treasury of United States—Notes 14,557,400.00
Director General of Railroads, U. S.—Notes 2,000,000.00

TOTAL 152,456,900.00

Non-Negotiable Debt to Affiliated Companies 420,362.43

CURRENT LIABILITIES:

Loans and Bills Payable...

Traffic and Car Service Balances Payable 32,560.19

Audited Accounts and Wages

Audited Vouchers Unpaid.. 4,084,833.37
Wages Unpaid 1,191,230.57 5,276,063.94

Miscellaneous Accounts Payable:

Individuals and Companies. 104,789.95
Agents Traffic Drafts 126,805.02
Claim Authorities 51,048.89 282,643.86

Interest Matured Unpaid:

Funded Debt 668,793.75
Equipment Trust Obligations 13,593.03 682,386.78

Dividends Matured Unpaid..

Funded Debt Matured Unpaid 9.00

Unmatured Interest Accrued:

Funded Debt 1,806,402.79
Equipment Trust Obligations 315,000.14
Unfunded Debt 2,851.64 2,124,254.57

Unmatured Rents Accrued...

Other Current Liabilities... 33,288.26
241,264.71

TOTAL 9,763,448.10

DEFERRED LIABILITIES:

Other Deferred Liabilities...

389,307.40

UNADJUSTED CREDITS:

Accrued Taxes 540,675.17

Operating Reserves 1,448,490.14

Accrued Depreciation—Equip-

ment 4,653,238.52
Reserve for Outstanding Stock of Proprietary Companies... 19,526.41

Other Unadjusted Credits... 1,587,789.78

TOTAL 8,249,720.02

CORPORATE SURPLUS:

Additions to Property through

Income and Surplus 280,381.71

Funded Debt Retired through

Income and Surplus 3,896.12

Profit and Loss—Surplus... 7,398,970.20

TOTAL 7,683,248.01

GRAND TOTAL

\$239,913,485.93

Accumulated and unpaid interest on Adjustment Mortgage (Income) Bonds amounting to \$3,333,333.34 and payable out of future income, or otherwise, or at the maturity of the bonds, is not comprehended in the above balance sheet.

ment Mortgage Bonds, amounting to two and one-half per cent. (2½%), represented by August 1, 1921 coupons, numbers 45 and 46 for \$12.50 each.

The outlook for business throughout the territory traversed by this railroad is excellent. The favorable prices for cotton, tobacco and other products of the Southern country give an increased purchasing power throughout this territory. Indications are that the movement of fertilizer during 1924 will be very heavy. The production of citrus fruits and vegetables in Florida and products from the other states of the South is increasing from year to year with unprecedented rapidity, indicating heavy increases in this class of traffic for 1924.

The passenger business of the Seaboard has already shown large increases and promises for the coming year to be heavily augmented. Florida and the whole Southern country are now looked to as perhaps the most important pleasure seeking territory of the country. People from various sections of this country and from other countries are beginning to realize that the South offers the greatest inducements not only for relaxation and rest, because of climatic and other conditions and the excellence of the hotel accommodations, but also as a place of residence, many investing in property and making the South either permanent or part time residence.

Traffic density in Seaboard territory has greatly increased. Mileage at one time unproductive is now productive.

Too great a concentration of railroads into a very few large consolidated systems, such as has been proposed, will not secure the best results to the South. Many millions of acres of agricultural lands; great deposits of minerals, clays and material used in industrial commerce, await development. Adequate transportation facilities are essential to enable the South to work out its destiny. These facilities can only be obtained by an attitude toward the railroads that will enable them to sell their securities with reasonable assurance to the investor of their ability to meet their obligations.

The Transportation Act of 1920 should not be amended in essential particulars. Harmful legislation affecting the railroads would have much to do with depressing existing business conditions.

The Directors desire that an expression of appreciation be extended to the officers and employees for the loyal and efficient service which they have rendered in the development and satisfactory progress of the Company's business.

S. DAVIES WARFIELD, President.

[ADVERTISEMENT]

(Continued from page 1116)

LONG ISLAND.—*Equipment Trust Certificates.*—The Interstate Commerce Commission has authorized an issue of \$1,875,000 of equipment trust certificates to be sold at not less than 97.56.

MAINE CENTRAL.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority for an issue of \$1,300,000 of 5½ per cent equipment trust certificates, sold, subject to the commission's approval, to Kidder, Peabody & Co., at 96.86.

MIDLAND VALLEY.—*Bonds.*—The Interstate Commerce Commission has authorized an issue of \$420,000 of first mortgage 5 per cent bonds to be sold at not less than 75 or to be pledged as security for notes.

NEW YORK, CHICAGO & ST. LOUIS.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of \$6,331,342 as compared with \$5,339,963 in 1922. The income account compares as follows:

	1923	1922
Freight revenue	\$52,832,311	\$46,963,734
Passenger revenue	2,372,475	2,133,574
Total operating revenues	57,477,379	50,948,425
Maintenance of way and structures	7,133,340	5,974,615
Maintenance of equipment	12,942,978	9,888,981
Traffic	1,318,455	1,193,657
Transportation	20,629,037	18,751,129
General	1,849,513	3,180,878
Total operating expenses	43,938,162	39,060,667
Net revenue from railway operations	13,539,217	11,887,758
Railway tax accruals	2,852,483	2,604,454
Railway operating income	10,679,044	9,277,413
Total non-operating income	1,530,799	924,241
Gross income	12,209,843	10,201,655
Total deductions from gross income	5,878,501	4,861,691
Net income	6,331,342	5,339,963
Income applied to sinking funds	98,482	98,226
Dividend appropriations of income	3,556,648	1,499,365
Income balance	2,676,212	3,742,312

NORFOLK & WESTERN.—*Six Months' Guaranty.*—The Interstate Commerce Commission has issued a final certificate fixing the amount of this company's guaranty for the six months following the termination of federal control at \$8,593,668, of which \$593,668 was due to be paid on the final certificate.

PENNSYLVANIA.—*Equipment Trust Certificates.*—The Interstate Commerce Commission has authorized an issue of \$20,100,000 of equipment trust certificates to be sold at not less than 97.56.

SOUTHERN PACIFIC.—*Equipment Trust Certificates.*—The Interstate Commerce Commission has been asked to authorize an issue of \$17,640,000 of 5 per cent equipment trust certificates to be sold to Kuhn, Loeb & Co., at 97.56.

SEABOARD AIR LINE.—*Annual Report.*—See excerpts from annual report for 1923 on adjacent pages.

INCOME ACCOUNT
FOR THE QUARTER ENDED MARCH 31, 1924, COMPARED WITH
QUARTER ENDED MARCH 31, 1923.

	Three Months ended March 31, 1924	Three Months ended March 31, 1923	Increase
Railway Operating Revenues	\$14,798,887.33	\$13,916,934.62	\$881,952.71
Railway Operating Expenses	11,142,823.59	10,892,710.37	250,113.22
Net Revenue from Railway Operations	\$3,656,063.74	\$3,024,224.25	\$631,839.49
Railway Tax Accruals	570,000.00	525,000.00	45,000.00
Uncollectible Railway Revenues	2,557.33	2,515.45	41.88
Railway Operating Income	\$3,083,506.41	\$2,496,708.80	\$586,797.61
Equipment Rents—Dr.	324,436.56	831,132.80	*506,696.24
Joint Facility Rents—Dr.	24,075.00	21,150.00	2,925.00
Net Railway Operating Income	\$2,734,994.85	\$1,644,426.00	\$1,090,568.85
Other Income	165,567.04	124,399.37	41,167.67
Gross Income	\$2,900,561.89	\$1,768,825.37	\$1,131,736.52
Rents and Other Charges	29,425.78	26,306.14	3,119.64
Applicable to Interest	\$2,871,136.11	\$1,742,519.23	\$1,128,616.88
Interest Charges (exclusive of Interest on Adjustment Mortgage (Income Bonds))	1,645,286.10	1,484,444.81	160,841.29
Discount on Securities	62,925.31	63,387.18	*461.87
Net Income before Adjustment Mortgage (Income) Bond Interest	\$1,162,924.70	\$194,687.24	\$968,237.46

*Decrease.
Baltimore, Md., April 25, 1924.

VIRGINIAN.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of \$3,671,445, as compared with \$3,408,033 in 1922. The income account compares as follows:

	1923	1922
Freight revenue	\$18,093,633	\$16,956,023
Passenger revenue	978,922	847,501
Gross revenue	20,328,348	19,009,444
Maintenance of way and structures	2,219,868	2,193,206
Maintenance of equipment	5,344,302	4,838,605
Traffic	142,494	140,566
Transportation	5,536,112	4,902,970
General	418,912	386,006
Total operating expenses	13,611,421	12,439,391
Net revenue from operation	6,716,927	6,570,052
Taxes	1,181,790	1,528,916
Income from operation	5,532,711	5,040,845
Gross income	6,477,643	5,922,289
Total deductions	2,806,199	2,514,256
Net income	3,671,445	3,408,033

WESTERN MARYLAND.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of \$1,671,169 as compared with \$33,398 in 1922. The corporate income account follows:

	1923	1922	Increase or Decrease
Freight revenue	\$21,030,921	\$16,454,780	\$4,576,140
Passenger revenue	959,474	975,595	-16,120
Total operating revenues	23,055,036	18,626,656	4,428,381
Maintenance of way and structures	2,919,972	2,879,119	130,853
Maintenance of equipment	5,882,271	4,052,323	1,829,948
Traffic	4,393,528	419,952	19,576
Transportation	7,736,945	6,660,071	1,076,874
General	546,928	542,486	4,442
Total operating expenses	17,716,434	14,721,259	2,995,175
Net operating revenue	5,338,602	3,845,193	1,493,409
Tax accruals	1,004,140	605,000	399,140
Operating income	4,334,239	3,239,666	1,094,573
Net operating income	4,621,552	3,074,577	1,546,975
Gross income	4,810,087	3,194,667	1,612,421
Total deductions	3,138,918	3,164,269	-25,351
Net income	1,671,169	33,398	1,637,771
Settlement of accounts prior to January 1, 1918, made by U. S. R. A.		16,348	-16,348
Credit income balance	1,671,169	49,745	1,621,423

Dividends Declared

Illinois Central.—Common, \$1.75, quarterly, payable June 2 to holders of record May 8.

Pennsylvania.—75 cents, quarterly, payable May 31 to holders of record May 1.

Trend of Railway Stock and Bond Prices

	April 29	Last Week	Last Year
Average price of 20 representative railway stocks	62.61	62.76	64.06
Average price of 20 representative railway bonds	85.26	85.26	82.44

Railway Officers

Executive

William J. Jenks, whose election as vice-president in charge of operation of the Norfolk & Western, with headquarters at Roanoke, Va., was announced in the *Railway Age* of April 26, page 1068, was born on March 21, 1870, near Raleigh, N. C., and was educated in public and private schools. He entered railway service in November, 1886, as a telegraph operator and agent at various places consecutively on the Raleigh & Augusta Air Line, now a part of the Seaboard Air Line, the Richmond & Danville, now a part of the Southern and the Norfolk & Western. From January, 1889, to Sept. 15, 1901, he was successively train dispatcher, chief dispatcher and car distributor of the Norfolk & Western. He then became a trainmaster of the Seaboard Air Line at Savannah and Americus, Ga., and Jacksonville, Fla., and in January, 1904, he was promoted to superintendent at Jacksonville, Fla., and Raleigh, N. C. In March, 1908, he was appointed chairman of the car allotment commission of the Norfolk & Western and in May, 1912, he was appointed superintendent of the Pocahontas division. In December, of the same year, he was promoted to general superintendent of the western general division and on January 1, 1918, Mr. Jenks was promoted to general manager at Roanoke, the position he held when he was elected vice-president in charge of operation.

Bernard W. Herrman, whose election as vice-president in charge of traffic of the Norfolk & Western, with headquarters at Roanoke, Va., was announced in the *Railway Age* of April 26, page 1068, was born on October 10, 1866, at Dayton, Ohio. He was educated in the public schools and entered railway service on August 17, 1882, with the Cleveland Columbus, Cincinnati & Indianapolis (C. C. C. & St. L.) and the Scioto Valley, now a part of the Norfolk & Western, as a messenger in the local freight station at Columbus, Ohio. On December 11, 1890, he was appointed contracting freight agent of the Big Four and two years later entered the service of the Norfolk & Western as a traveling freight agent at Columbus. On June 3, 1893, he became local freight agent for the same company and the following year entered the employ of the Cleveland, Akron & Columbus, now a part of the Pennsylvania, in a similar capacity. On December 9, 1910, he became general agent of the Norfolk &



W. J. Jenks



B. W. Herrman

Western at Cincinnati, Ohio, and on December 1, 1912, he was promoted to assistant general freight agent, with headquarters at Columbus. On July 1, 1917, he was promoted to general freight agent, with the same headquarters, and on November 1, 1918, he was transferred to Roanoke, in a similar capacity. In June, 1922, Mr. Herrman was promoted to assistant freight traffic manager, with the same headquarters, the position he held at the time of his recent election as vice-president in charge of traffic.

David McK. Ford whose appointment as assistant to the vice-president in charge of purchases and stores of the Canadian National was announced in the *Railway Age* of April 26, page 1068, was born in Glasgow, Scotland, and joined the service of the North British Railway in 1900 as a clerk in the general goods manager's office and three years later entered the service of the Caledonian Railway as a clerk in the district superintendent's office. In April, 1905, he came to Canada to enter the service of the Canadian Northern at Toronto as a clerk, and in July of the same year resigned to become chief clerk in the operating and accounting department of the Halifax & Yarmouth at Yarmouth, N. S. In December, 1905, he entered the service of the Halifax & Southwestern as chief clerk in the auditing and accounting department with headquarters at Bridgewater, N. S. In July, 1910, he went with the Canadian Northern Express Company as auditor and cashier at Quebec and in February, 1916, was appointed auditor for the Quebec lines of the Canadian Northern Railway. In September, 1916, he was promoted to be accountant of the Eastern lands department of the Canadian National Railways with headquarters at Toronto and in November, 1918, became chief clerk to the president of the Canadian National and Canadian Government Merchant Marine, which position he held until 1922 when he was appointed office assistant to the president. Upon the formation of the present Canadian National Railway in 1923, Mr. Ford was appointed assistant to the director of purchases and stores and consequent to the promotion of Mr. Vaughan to the position of vice-president of purchases and stores, Mr. Ford was appointed his assistant.

Financial, Legal and Accounting

J. H. Barwise, Jr., whose appointment as general solicitor for the Colorado & Southern, the Ft. Worth & Denver City and the Wichita Valley, with headquarters at Denver, Colo., and Ft. Worth, Tex., was reported in the *Railway Age* of April 12, was born in 1868 in St. Charles county, Mo. He engaged in the general practice of law after his admission to the bar in 1892 and entered railway service in 1900 as local attorney for the Ft. Worth & Denver City, at Wichita Falls, Tex. He was promoted to assistant general attorney, with headquarters at Ft. Worth, Tex., in 1902, and held this position until 1906 when he was promoted to general attorney of the Ft. Worth & Denver City and the Wichita Valley. Mr. Barwise held this position until his recent promotion to general solicitor of the Colorado & Southern. In addition to his duties as general solicitor of the Colorado & Southern, Mr. Barwise has also been appointed district attorney for the McCook and Sterling divisions of the Chicago, Burlington & Quincy, with headquarters at Denver, Colo.



J. H. Barwise, Jr.

Operating

J. E. Crawford assistant general manager of the Norfolk & Western, with headquarters at Roanoke, Va., has been promoted to general manager, with the same headquarters, suc-

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position until May, 1902, when he was promoted to secretary to the vice-president and general manager. Mr. Knickerbocker was promoted to assistant to the general manager in January, 1909, and in August, 1916, he was promoted to general superintendent. He was appointed general manager of the Alaska Steamship Company and the Copper River & Northwestern in August, 1922, and continued in this position until his recent appointment as general manager of the Los Angeles & Salt Lake.

D. W. Dinan, general superintendent of the New York Central, with headquarters at Buffalo, N. Y., has been promoted to assistant general manager, with headquarters at Syracuse, N. Y. succeeding T. W. Evans, promoted. F. E. McCormack, division superintendent, with headquarters at Corning, N. Y., has been promoted to general superintendent, with headquarters at Buffalo, succeeding Mr. Dinan. D. B. Fleming, division superintendent, with headquarters at Albany, N. Y., has been promoted to general superintendent, with the same headquarters succeeding F. E. Williamson, who has been appointed general superintendent of the New York Terminal district, with headquarters at New York, instead of assistant general manager, with headquarters at Syracuse, as was reported in our issue of April 26. C. H. Calkins, division superintendent, with headquarters at Buffalo, has been transferred to Albany, in the same capacity, succeeding Mr. Fleming. H. Scott, division superintendent, with headquarters

ceeding W. J. Jenks, promoted. The position of assistant general manager has been abolished.

P. T. White, superintendent of the Cincinnati-Sandusky division of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Springfield, Ohio, has been promoted to assistant general superintendent, with headquarters at Indianapolis, Ind., succeeding C. S. Millard, whose promotion to general manager was reported in the *Railway Age* of April 19. E. F. Hayes, superintendent of the St. Louis division, with headquarters at Mattoon, Ill., has been transferred to the Cincinnati-Sandusky division, succeeding Mr. White. F. N. Reynolds, superintendent of the Springfield division and the Indianapolis Terminal, with headquarters at Indianapolis, Ind., has been transferred to the St. Louis division, succeeding Mr. Hayes. E. M. Kelley, superintendent of terminals at Cincinnati, Ohio, has been promoted to superintendent of the Springfield division and the Indianapolis Terminal, succeeding Mr. Reynolds. S. V. Bevington, assistant superintendent of the Cincinnati-Sandusky division, with headquarters at Springfield, Ohio, has been promoted to superintendent of terminals at Cincinnati, succeeding Mr. Kelley. E. W. McVicker, trainmaster, with headquarters at Kankakee, Ill., has been promoted to assistant superintendent of the Cincinnati-Sandusky division, succeeding Mr. Bevington.

F. H. Knickerbocker, general manager of the Alaska Steamship Company and the Copper River & Northwestern, with headquarters at Seattle, Wash., has been appointed general manager of the Los Angeles & Salt Lake, with headquarters at Los Angeles, Cal., succeeding W. H. Comstock, who has resigned to become vice-president of the Citizens' Trust & Savings Bank of Los Angeles. Mr. Knickerbocker was born on December 10, 1875, at Chicago, and entered railway service in March, 1897, as stenographer to the general freight agent of the Oregon Short Line at Salt Lake City, Utah. He was promoted to secretary to the general superintendent in January, 1900, and held this

at Oswego, N. Y. has been transferred to Corning, succeeding Mr. McCormack. F. S. Risley, assistant superintendent at Albany, has been promoted to superintendent, with headquarters at Buffalo, succeeding Mr. Calkins and M. E. Welch, assistant superintendent at Buffalo, has been promoted to superintendent, with headquarters at Oswego, succeeding Mr. Scott.

H. C. James, Jr., assistant superintendent of telegraph of the Northern Pacific, with headquarters at St. Paul, Minn., has been promoted to the newly created position of general superintendent of icing facilities, with the same

headquarters. Mr. James was born in 1889, and entered railway service in July, 1911, as a lineman in the telegraph department of the Northern Pacific. He was promoted to telephone inspector in September, 1911, resigning in December of that year to engage in other business. He re-entered the service of the Northern Pacific in July, 1913, as assistant general foreman in the telegraph department and in July, 1916, he was promoted to telegraph and telephone en-

gineer, with headquarters at St. Paul, Minn. During the war, Mr. James served as a first lieutenant in the signal corps at Ft. Leavenworth, Kans. He returned to the Northern Pacific in July, 1919, as valuation engineer at St. Paul, and held this position until June, 1920, when he was promoted to assistant superintendent of telegraph. Mr. James continued in this capacity until his recent promotion to general superintendent of icing facilities.

C. S. Millard, whose promotion to general manager of the Cleveland, Cincinnati, Chicago & St. Louis, was reported in the *Railway Age* of April 19, was born on May 3, 1874. After graduating from Sheffield Scientific School of Yale University, in 1896, he entered railway service as a rodman on the Pennsylvania. In March, 1897, he was appointed an assistant in the engineering department of the Peoria & Eastern, now a part of the C. C. C. & St. L., being promoted in July of the following year to assistant engineer. Mr. Millard was promoted to engineer maintenance of way in October, 1899, and he held this position until March, 1901, when he was appointed second assistant engineer of

the Delaware, Lackawana & Western. He was appointed engineer maintenance of way of the Peoria & Pekin Union in August, 1901, and later was appointed assistant engineer on the Illinois Central at Memphis, Tenn. Mr. Millard entered the service of the Cleveland, Cincinnati, Chicago & St. Louis in August, 1903, as engineer maintenance of way. He was later promoted to engineer of track and roadway and he continued in this position until October, 1912, when he was promoted to superintendent of the Michigan division. In October, 1913, he was transferred to the Chicago division as acting superin-



F. H. Knickerbocker



H. C. James, Jr.



C. S. Millard

tendent and in March, 1914, he was appointed superintendent of the Peoria & Eastern division. Mr. Millard was transferred to the St. Louis division in January, 1916, and he held this position until June, 1918, when he was promoted to assistant general superintendent. He continued in this capacity until his recent promotion to general manager.

C. A. Hayes, general manager of the Canadian National Express Company, has resigned and **W. C. Muir**, assistant general manager, has been appointed acting general manager of the company. Mr. Hayes, who is in the sixtieth year, gained his early railroad experience in New England and in 1903 he was named assistant general freight agent of the Grand Trunk at Chicago; general freight agent of that system at Montreal in 1908; freight traffic manager of the Grand Trunk in 1911; joined the Canadian Government Railways as general traffic manager with headquarters at Moncton, N. B., 1913; and became general manager, Eastern lines, Canadian Government Railways, in 1917. Upon the consolidation of the Canadian Government Railways with the Canadian Northern in 1918 Mr. Hayes was appointed vice-president in charge of traffic with headquarters at Toronto and in 1923 he became head of the Canadian National Express with headquarters in Montreal. Mr. Muir was born in Western Ontario and entered the service of the American Express Company in Toronto in 1884. He was later agent of the Dominion Express Company at Winnipeg and joined the Canadian Northern Express in 1902 being successively superintendent, auditor, general superintendent and general manager at Winnipeg. Upon the amalgamation of the companies in 1921 Mr. Muir became vice-president and general manager with headquarters in Montreal.

Traffic

G. S. Trowbridge, has been appointed assistant to the general traffic manager of the St. Louis Southwestern, with headquarters at St. Louis, Mo., succeeding J. P. Park, whose death on March 27 was reported in the *Railway Age* of April 5.

A. D. Aiken, general agent, freight department, of the Chicago, Rock Island & Pacific, with headquarters at St. Louis, Mo., has been promoted to assistant general freight agent, with the same headquarters. **P. Portel**, division freight agent, with headquarters at Oklahoma City, Okla., has been promoted to assistant general freight agent, with the same headquarters.

John H. Corcoran has been appointed general steamship agent in charge of port staffs of the Canadian National, at Halifax and Quebec. Mr. Corcoran, who joined the Canadian National in 1890, has been for the past four years general traveling passenger agent, with headquarters at Moncton, N. B. During the winter Mr. Corcoran will be in charge of the port staffs at Halifax and in summer of the port staffs at Quebec.

Engineering, Maintenance of Way and Signaling

L. Andrews, chief engineer of the San Antonio & Aransas Pass, with headquarters at Yoakum, Tex., has resigned.

Mechanical

T. J. Clayton, roundhouse foreman of the Kansas City Southern at Port Arthur, Tex., has been promoted to master mechanic, with the same headquarters.

F. E. Russell, assistant mechanical engineer of the Southern Pacific, with headquarters at San Francisco, Cal., has been promoted to mechanical engineer, with the same headquarters, succeeding **Howard Stillman**, mechanical engineer and engineer of tests, who has retired. **D. Wood**, assistant mechanical engineer and assistant engineer of tests, has been promoted to engineer of tests, with headquarters at San Francisco, also succeeding Mr. Stillman.

M. D. Stewart, master mechanic of the Southern, with headquarters at Alexandria, Va., has been transferred to Spencer, N. C., succeeding **C. G. Goff**, who has been trans-

ferred to South Richmond, Va., **A. M. Lawhon**, master mechanic at South Richmond, Va., has been transferred to Alexandria, succeeding Mr. Stewart. **J. L. Camtwell**, master mechanic, with headquarters at Charleston, S. C., has been transferred to Bristol, Va., succeeding **J. J. Robinson**, who has been appointed shop superintendent at Spencer, N. C. **J. S. Breyer** has been appointed master mechanic at Charleston, succeeding Mr. Camtwell.

Purchasing and Stores

Louis Lavoie, whose appointment as general purchasing agent of the Canadian National, with headquarters at Montreal, was announced in the *Railway Age* of April 26, page 1070, was born at Rimouski, Que., on June 22, 1879, and in 1894 entered the service of the Intercolonial Railway at Moncton, N. B., as a junior clerk. He was employed in various clerical capacities from that time until 1905 when he became assistant to the general manager, operating branch. In 1909 he was appointed a purchasing agent for the Canadian Government Railways at Ottawa and in March, 1910, became purchasing agent for the Department of Railways and Canals (C. G. R. lines and Dominion canals), with headquarters at Ottawa. On January 1, 1919, he was appointed assistant general purchasing agent of the Canadian National at Toronto and on December 1, 1920, was promoted to general purchasing agent. With the formation of the present Canadian National Railways, Mr. Lavoie was appointed purchasing agent at Toronto and held that position until his recent promotion.

Special

T. J. O'Shaughnessy, claim adjuster of the Chicago Rock Island & Pacific, with headquarters at Chicago, has been promoted to supervisor of personnel with the same headquarters.

Obituary

O. P. Bennett, general agent of the Chicago & Alton, with headquarters at Kansas City, Mo., died in that city on April 22.

M. V. Mahoney, general freight and passenger agent of the Wrightsville & Tennille died at his home in Dublin, Ga., on April 21.

Archibald Gray, assistant to the traffic manager of the Western Pacific, with headquarters at San Francisco, Cal., died in that city on April 29.



Ewing Galloway

Railway Station at São Paulo, Brazil